

THE TALKING MACHINE REVIEW

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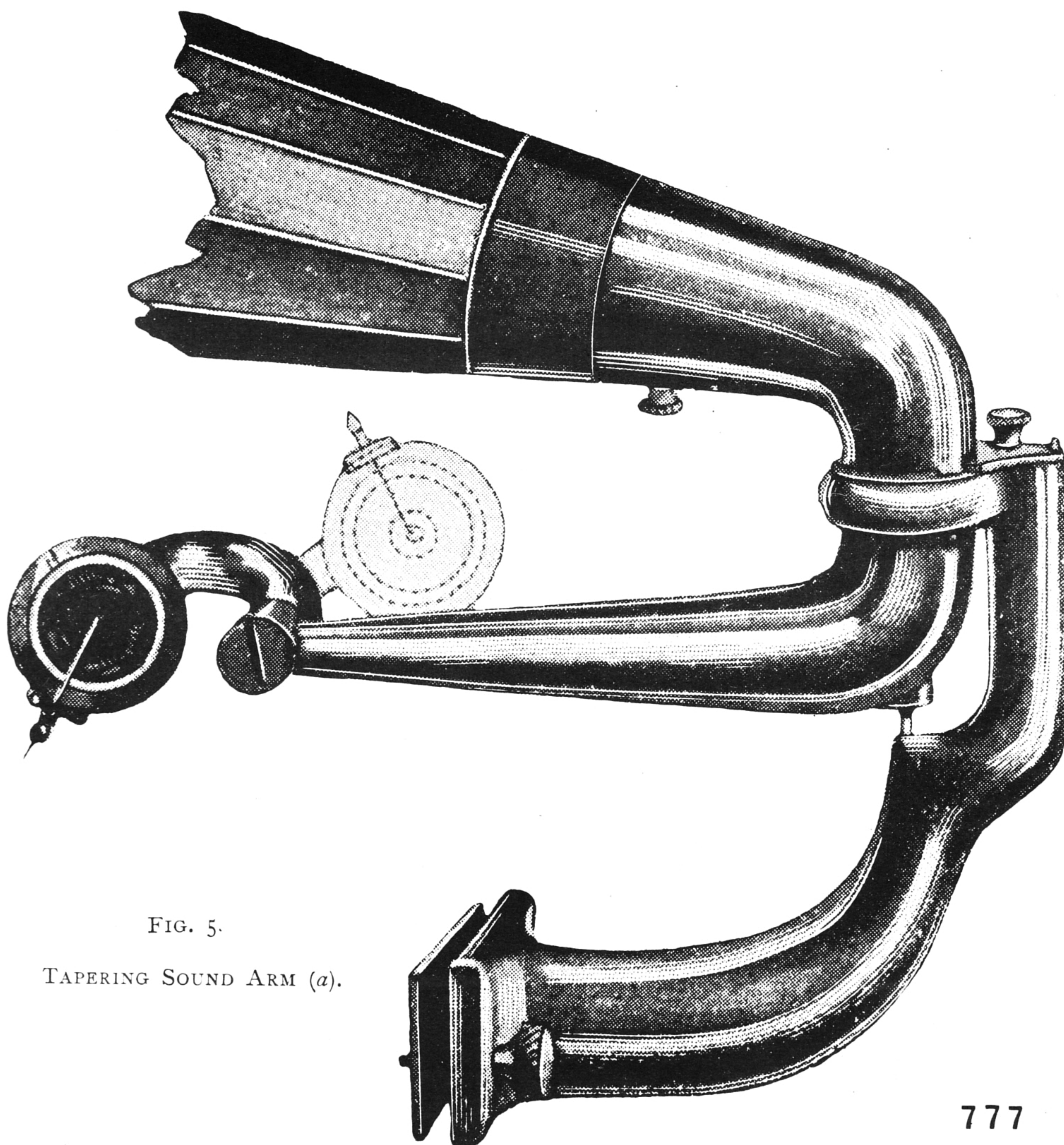


FIG. 5.

TAPERING SOUND ARM (a).

THE GRAMOPHONE AND THE MECHANICAL RECORDING AND REPRODUCTION OF MUSICAL SOUNDS.

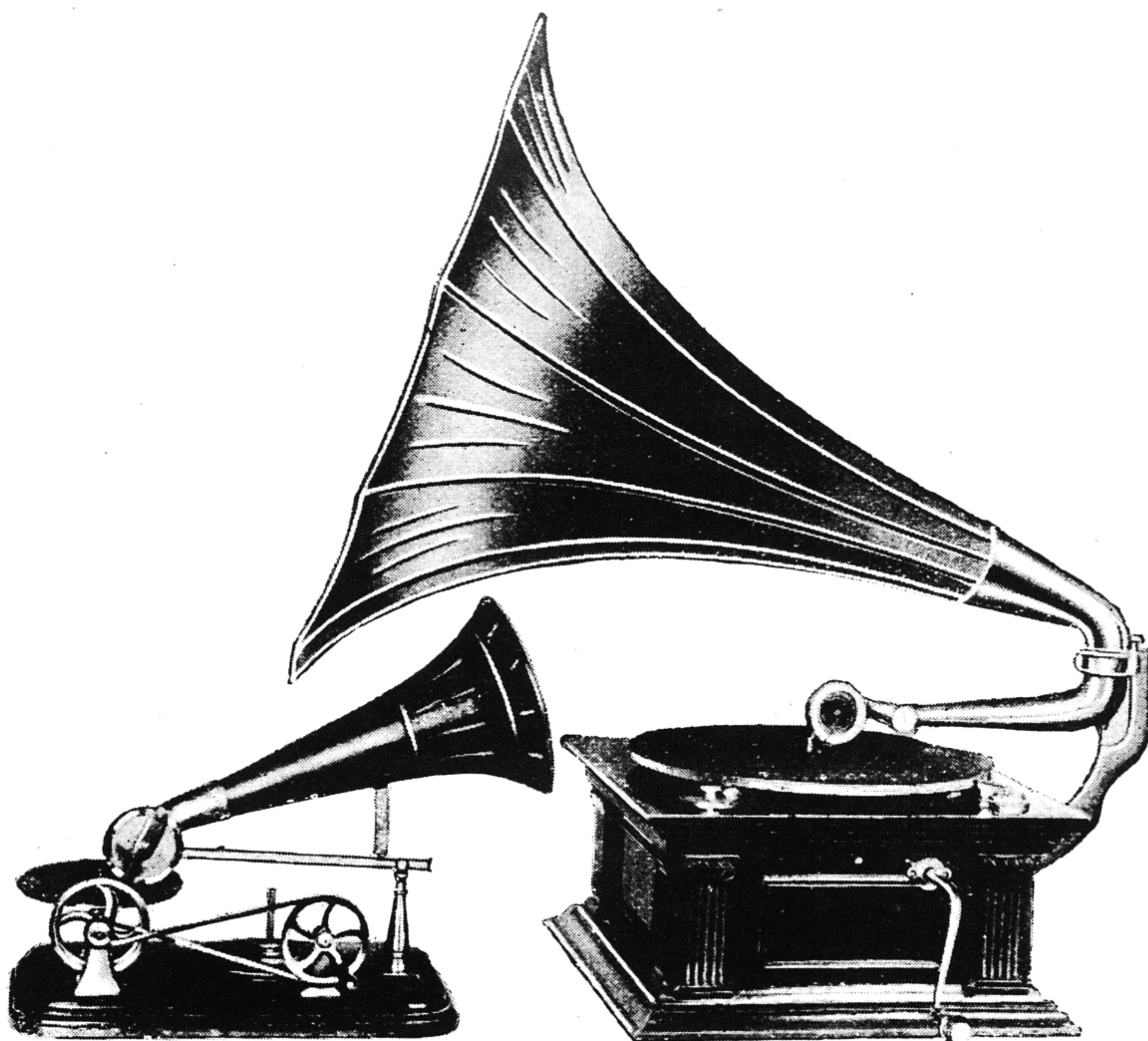
A Paper read to the Royal Society in 1908

by Mr. L.N. Reddie

The mechanical recording and reproduction of sounds has already been dealt with in papers read before this Society. The talking-machine was introduced to the Society on May 8, 1878, by Sir William Preece; on the 28th November, 1888, Colonel Gouraud read a paper entitled "The Phonograph;" and on the 5th of December of the same year, Mr. Henry

Edmunds read a paper on "The Graphophone." I do not propose this evening to go over the ground covered by these three papers, which deal with the discovery of the talking-machine, and the improvements made in it up to twenty years ago, but I shall deal more particularly with the invention and the development of a later type of talking-machine, and shall describe the various industrial and

FIG. 1.



other processes, which are connected to-day with the recording and reproduction of sound by means of this machine.

Before going further, I should like to call your attention to two of the instruments before you; the larger machine is one of the latest models of the gramophone, and the smaller is one of the earliest types. (Fig. 1.) The difference in appearance of the two machines is striking; but it is small compared with the difference in their capabilities, and, if you will allow me, I will make this apparent by endeavouring to obtain an audible reproduction from the old-fashioned type, and will then play a short selection on the up-to-date instrument.

The progress made towards perfection during the period of twenty years since the invention of the gramophone has been very considerable, and so rapid has it been in recent years, that too many people to-day, when they hear the word "gramophone" mentioned immediately think of an instrument like this (small machine) and of the sounds which it produced just now. The particular lines upon which improvements have been carried out I will deal with later.

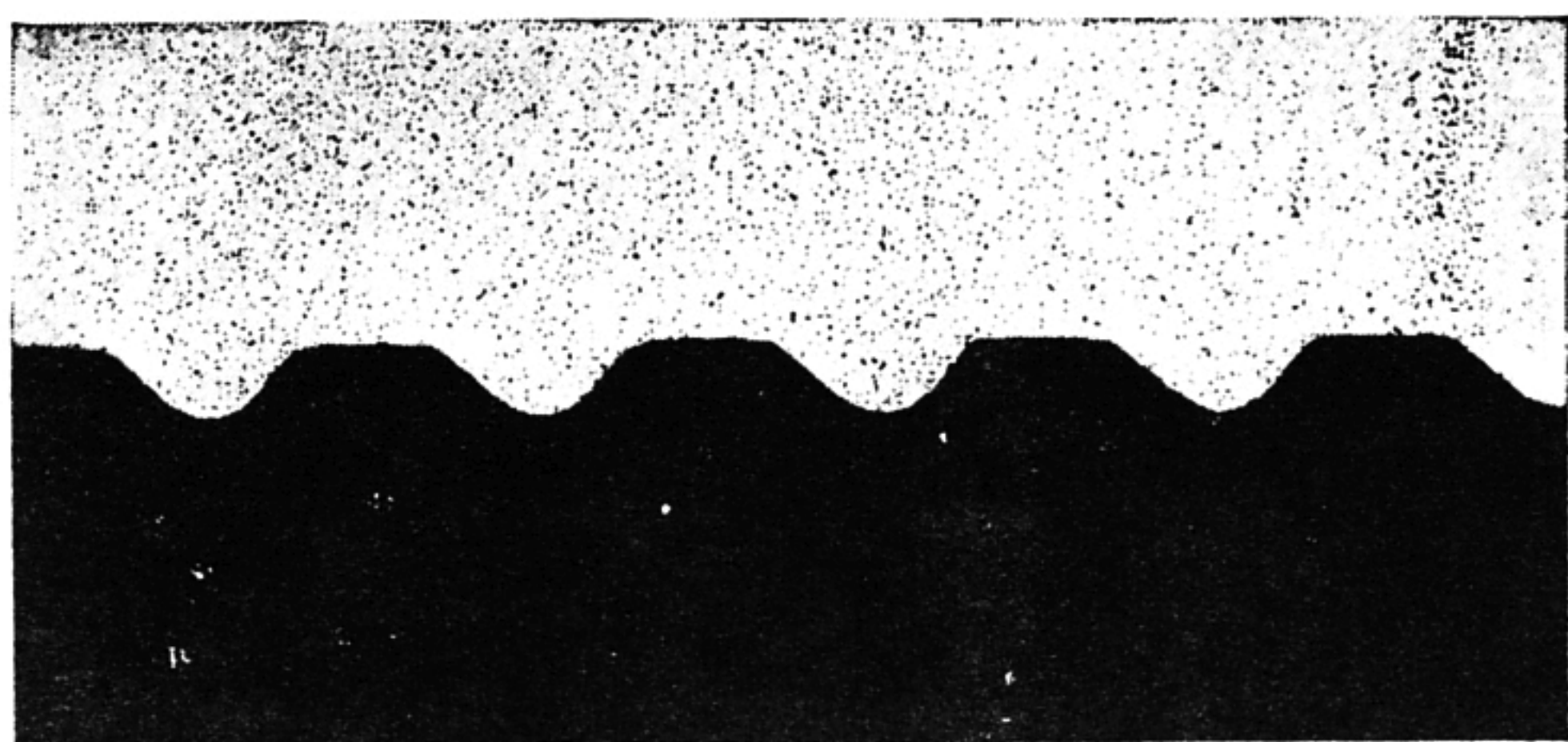
The gramophone was invented by Mr. Emile Berliner. At an early age he left his home in Germany and went to America, where he worked for a number of years with great success on telephone construction. He afterwards turned his attention to the improvement of the talking-machine, and on May 4th, 1887, just twenty-one years ago, he filed an application for patent in the United States, and a corresponding application in this country in November of the same year. On May 16th, 1888, he exhibited his invention before the Franklin Institute, Pennsylvania.

At the date of Mr. Berliner's invention, machines for recording and reproducing sound were already known and in use. Some ten years earlier, in 1878, Mr. Thomas A. Edison had patented the first practical talking-machine, and he termed the recording machine,

the record, and the reproducing machine a phonograph, a phonogram, and a phonet respectively. In 1885 the graphophone was invented by Professor Graham Bell and Mr. C. S. Tainter, of telephone fame, who working as the Volta Laboratory Association of Washington, had been studying the problem of recording and reproducing sound for some years. The fundamental principles on which these two instruments, the phonograph and graphophone, worked were the same. In each case the sound-waves set up in the air by any source of sound were allowed to strike a delicately held diaphragm which vibrated under the impact of the sound waves. The vibrations of the diaphragm were made to leave a record on a suitable medium, and this sound record was in turn used to perform the inverse operation when it was required to reproduce the recorded sounds; that is to say the record was made to vibrate a sensitive diaphragm, and this set up in the air particular waves, which conveyed to the ear of the hearer the impression of sound. The essential difference between the Edison and the Bell and Tainter types of sound recording and reproducing machines lay in the manner in which the vibrations of the diaphragm were recorded; for while Edison's invention consisted in *indenting* a record with an up and down sound line, Bell and Tainter obtained a record by *cutting* an up and down line in a suitable medium. According to both these inventions, therefore, the vibrating diaphragm was made to produce on the surface of the record a sound line of varying depth. Berliner on the other hand traced or cut his record in the recording medium in the form of a sinuous line of uniform depth (See Fig. 2), "substantially" as he says in his Patent Specification, "in the manner of the phonautograph," invented in 1857 by Léon Scott.

The idea of recording and reproducing speech on this system had also occurred to a Mr. Charles Cros, a Frenchman, who on April 30th, 1877, deposited a sealed packet with the Académie des Sciences, Paris, in

FIG. 2.



SECTION ACROSS SOUND-LINES OF GRAMOPHONE RECORD. (Magnified 50 diam.)

which he disclosed the idea of reproducing sound by means of a permanent metal record obtained from a Scott phonautograph by photo-engraving through the coating of lamp-black in which the sound line was traced. Thus he anticipated Berliner, and Edison as well, as far as the idea went; but he cannot be said to have disclosed the means of carrying his ideas into practice. Mr. Berliner only became aware of this gentleman's invention three months after he had filed his own application for a patent. In the *Electrical World* of November 12th, 1887, in which he first made public his invention of the gramophone, he writes of Mr. Cros as follows:—"Although he had virtually abandoned his invention, the fact remains that to Mr. Charles Cros belongs the honour of having first suggested the idea of and a feasible plan for mechanically reproducing speech once uttered."

The reasons which led Berliner to adopt a different system of recording and reproducing sound from that employed by Edison and the Volta Association, are clearly set out in the introduction to his first Patent Specification, No. 15232 of 1887, where he says:—

"By the ordinary method of recording spoken words or other sounds for reproduction, it is attempted to cause a stylus attached to a vibratory diaphragm to indent a travelling sheet of tinfoil, or other like substance, to a depth varying in accordance with the amplitudes of the sound waves to be recorded. This attempt is necessarily more or less ineffective, for the reason that the force of a diaphragm vibrating under

the impact of sound waves is very weak, and that in the act of overcoming the resistance of the tinfoil, or other material, the vibrations of the diaphragm are not only weakened, but are also modified. Thus, while the record contains as many undulations as the sound which produced it, and in the same order of succession, the character of the recorded undulations is more or less different from those of the sounds uttered against the diaphragm. There is, then, a true record of the pitch, but a distorted record of the quality of the sounds obtained.

"With a view of overcoming this defect, it has been attempted to engrave, instead of indent, a record of the vibrations of the diaphragm, by employing a stylus, shaped and operated like a chisel, upon a suitably prepared surface; but, even in this case, the disturbing causes above referred to are still present. In addition to this, if in the apparatus of the phonograph or graphophone type, it is attempted to avoid the disturbing influence of the increase of resistance of the record surface, with the depth of the indentation or cut as much as possible, by primarily adjusting the stylus so as to touch the record surface only lightly, then another disturbing influence is brought into existence by the fact that with such adjustment, when the diaphragm moves outwardly, the stylus will leave the record surface entirely, so that part of each vibration will not be recorded at all. This is more particularly the case when loud sounds are recorded, and it manifests itself in the reproduction, which then yields quite unintelligible sounds.

"It is the object of my invention to overcome these and other difficulties by recording spoken words or other sounds without perceptible friction between the recording surface and the recording stylus, and by maintaining the unavoidable friction uniform for all vibrations of the diaphragm. The record thus obtained, almost frictionless, I copy in a solid resisting material, by any of the methods hereinafter described; and I employ such copy of the original record for the reproduction of the recorded sounds.

"Instead of moving the recording stylus at right angles to, and against the record surface, I cause the same to move under the influence of sound waves parallel with and barely in contact with such surface, which latter is covered with a layer of any material that offers a minimum resistance to the action of the stylus operating to displace the same."

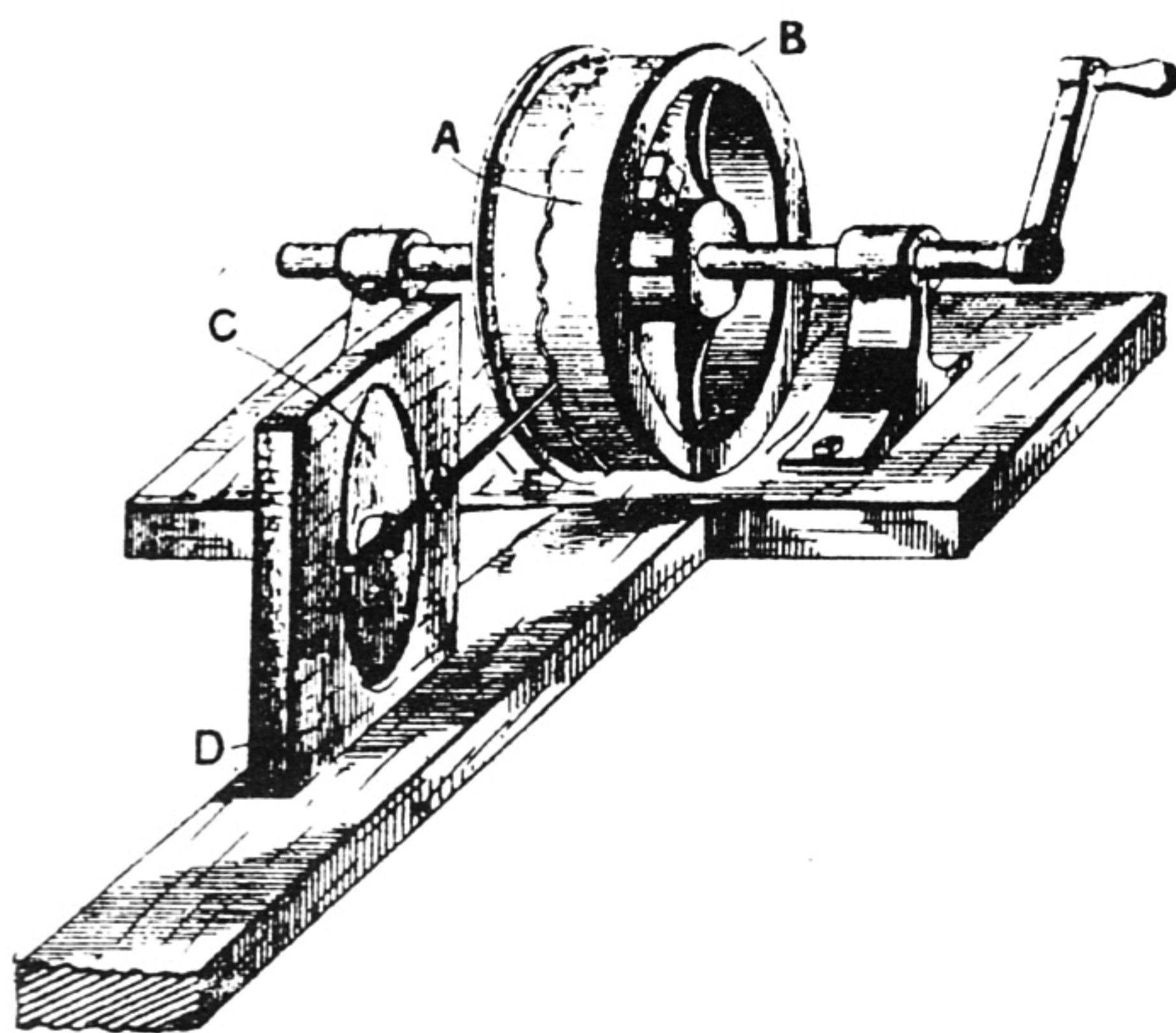
He then proceeds to a detailed description

of his instrument, which he terms a "gramophone."

Nowadays the term "phonograph" is popularly applied to a sound-reproducing machine which plays a cylinder record, while "gramophone" is often incorrectly used for any disc machine. This distinction is not, however, correct. It is a fact worth noting that the first figure of the drawings in Berliner's original patent shows a record wound on a *cylindrical* support, whereas the first figure in Edison's patent shows a *disc* record, thus directly contradicting the popular distinction just referred to.

According to the specification of his first patent, Mr. Berliner made his sound record as follows:—He took a strip of paper, parch-

FIG. 3.



ment, or metal, A (Fig. 3), stretched it round a drum, B, and coated it with a layer of lamp-black, or other substance which could be easily removed by the point of the stylus. He provided a diaphragm, C, which was held by its edges in a casing, D, and to the centre of this diaphragm he attached one end of the recording stylus, E. This stylus or bar was fulcrummed halfway down to the side of the diaphragm casing, and the other end was left free to move in accordance with the vibrations of the dia-

phragm under the impact of the sound waves. The point of the stylus lightly touched the strip on which the record was to be traced, and as the diaphragm was spoken against, and the drum rotated, the stylus removed the lamp-black from the record in a sinuous undulating line. The record thus obtained he proposed to preserve by coating it with varnish or the like. For the purpose of reproduction he copied the record in a resisting material, either mechanically, by engraving, or by etching, or photo-engraving, and this gave him a permanent record, consisting of a wavy grooved line in a strip of copper, nickel, or other material. To reproduce the sounds recorded, this strip was in turn stretched round a drum, the point of the stylus placed in the groove, and the drum rotated. This caused the diaphragm to which the other end of the stylus was attached, to vibrate and reproduce the recorded sounds. The specification continues:—

"In the phonograph and graphophone the end of the reproducing stylus which bears upon the indented or engraved record, has a vertical upward and downward movement; it is forced upwardly in a positive manner by riding over the elevated portion of the record, but its downward movement is effected solely by the elastic force of the diaphragm, which latter is always under tension. In my improved apparatus the stylus travels in a groove of even depth and is moved positively in both directions; it does not depend upon the elasticity of the diaphragm for its movement in one direction. This I consider to be an advantage, since by this method the whole movement of the diaphragm is positively controlled by the record, and is not affected or modified by the physical conditions of the diaphragm, which conditions necessarily vary from time to time, and constitute some of the causes of imperfect reproduction of recorded sounds."

It is this feature of the positive control of the diaphragm, coupled with the uniform friction and resistance in the cutting operation, and the consequent accurate tracing of the curve of the sound wave, that has brought the Berliner type of machine to the forefront as a musical instrument. While the cylinder

machine with the up and down cut offers advantages for making records at home and for office work, being handier, for instance, than the disc recording machine, it has not been found possible to obtain the same truth of reproduction of musical sounds that can be obtained with the gramophone. An examination of the microscopic undulations in the sound wave, which determine its pitch, loudness, and quality or timbre (some examples of which I shall show you presently), will make this easy to understand.

In the second or improved form of gramophone described in Berliner's patent, a flat disc record is used, which, he says, offers advantages for copying purposes. Here a disc of glass is employed, and this is covered preferably with a semi-fluid coating of ink or paint, in which the stylus traces or cuts an undulating line as before. This coating he prefers, because it does not flake, and leave a rough-edged line, like the lampblack record.

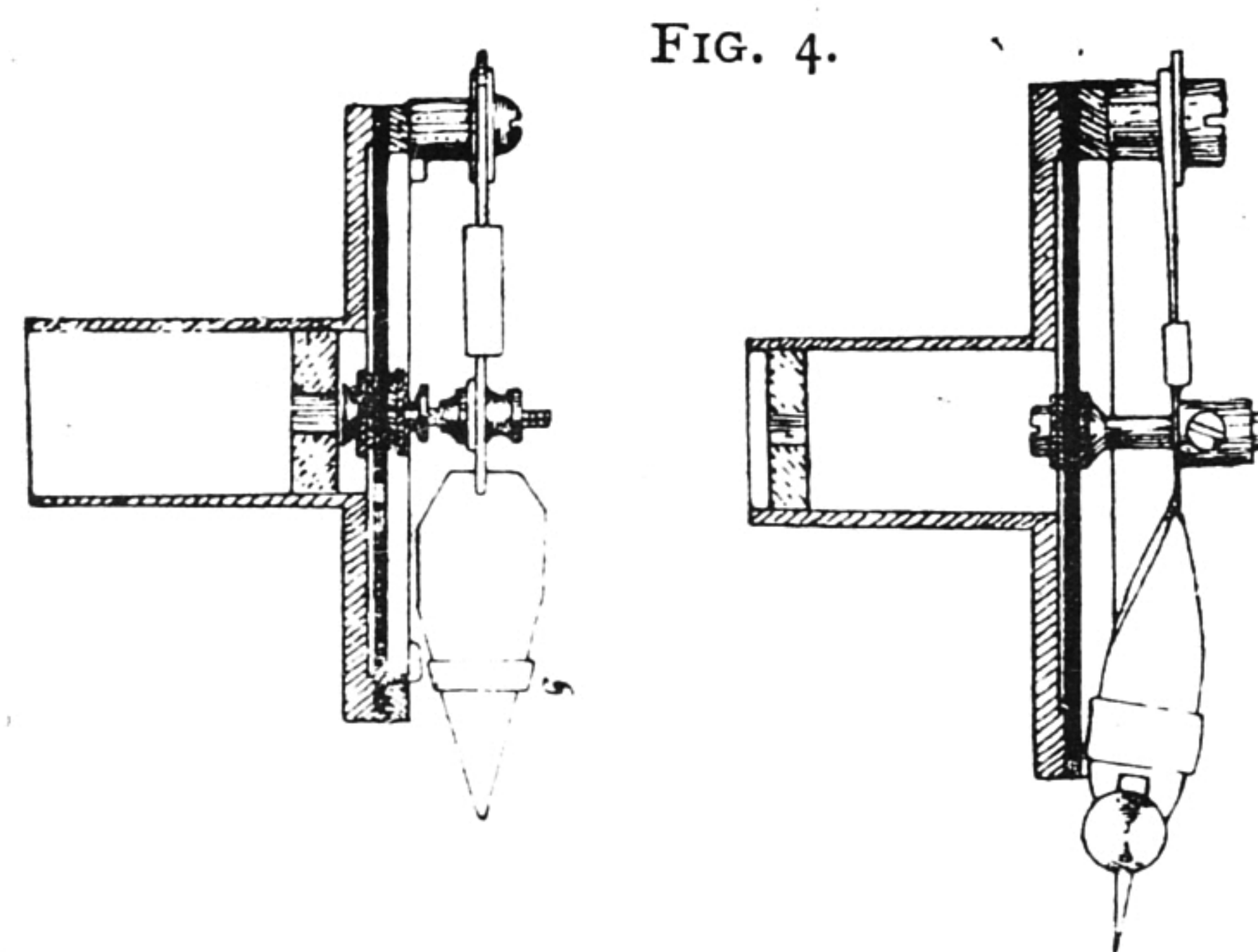
A turn-table carries the record disc, and is rotated by any suitable means. As it revolves, it is caused to travel slowly sideways past the recording point, so that the sound line takes the form of a sinuous spiral running from the outer edge of the record towards the centre, or *vice versa*. A permanent record in metal is obtained by photo-engraving.

Mr. Berliner's next step was to make a disc record in solid material by direct etching. (U.S. Patent 382790.) To this end he coated a disc or cylinder of zinc or glass with a layer of some substance which, while offering no perceptible mechanical resistance to the movements of the recording stylus, resisted the chemical action of acids. The coating he preferred consisted of beeswax dissolved in benzine. When the recording stylus had traced out its line on the record, and exposed the solid disc below, the latter was etched, and a permanent record produced. Copies could be obtained by the galvano-plastic process, by making a matrix, and impressing discs of hard rubber, or the like. Although this system of etching was considered at the time a great

advance in sound recording, it never gave very satisfactory results. Owing to the action of the acid, which besides biting down into the metal also undercut the protective coating, the sound line was always left with rough sides, and this roughness was transmitted to the copies, so that the reproduction was accompanied by a very marked and disagreeable scratching sound.

In 1890, the inventor of the gramophone took out patents for further improvements, and in particular for new forms of diaphragm holder or sound-box, as it is called, one for recording purposes and the other for reproducing. (Fig. 4).

Although at this date, Mr. Berliner himself had spent much time on improving his invention, the gramophone had not yet become a commercial article. It had not even reached the stage of the small machine you see here. It was looked upon as a scientific curiosity, or at best a toy, but not as a machine which could ever be expected to become an instrument of entertainment, and no one except perhaps the inventor ever imagined it would attain its present perfection, or enjoy its present popularity. The phonograph and graphophone had obtained a firm footing and for commercial purposes at any rate, serving for instance as automatic stenographers, and in a lesser degree as instruments of entertainment, had attained success.



RECORDING AND REPRODUCING SOUND-BOXES,
OLD TYPE.

The Volta people had patented broadly the system of cutting or tracing a sound line in a solid body, so that even Berliner's own method was within the scope of their patent, and from the point of view of patent rights, Mr. Berliner was at a disadvantage. Moreover, the reproduction he obtained was far behind that given by the phonograph and graphophone, for though in the latter instruments the sound waves were distorted, there was a comparative absence of scratch. Very different is the position to-day when in the United States at any rate practically the whole of the enormous trade in disc machines is subject to a Berliner Patent No. 534543, which covers the use of a freely swinging sound-arm or horn, carrying the sound-box and guided throughout the playing of the record entirely by the sound lines.

It was not until the end of 1897 that the manufacture commenced in the United States of a disc record which quickly made the gramophone popular, and may be regarded as the starting-point of the industry of to-day. Instead of a record made from an etched metal original, a disc record could now be offered to the public made by a new process which allowed many hundreds of good *fac-simile* copies to be made from one master record. This process consisted in cutting the first record in a disc-shaped blank of wax-like material, obtaining a solid metal negative thereof by electro-deposition, and pressing copies of the original from this negative or matrix in a material which was hard at normal temperatures but became plastic under heat.

About this time a number of inventors began to turn their attention to the improvement of the machine, to keep pace with the vast improvements which were being made in the records. The machine was provided with an efficient governor or speed-regulator, to ensure a uniform speed of rotation of the turntable. Next the hand-driven machine was abolished altogether, and a machine substituted which was driven by a spring motor.

To-day the better class machines are furnished with a motor which will run fifteen minutes or more for one winding of the motor. The speed regulator was furnished with an indicator to show at what speed the machine was running. It will easily be understood how essential it is that the record on reproduction should be revolved at exactly the same pace as the blank on which the original record was cut, if the production is really to be a true reproduction of the original selection; if, for instance, the record is rotated faster, the sound waves set up by the reproducing diaphragm will be produced at a higher speed than that at which the corresponding sound waves fell upon the recording diaphragm. The greater the frequency of the sound waves the higher the note, so that a record, if played too fast, is pitched in a higher key, and a bass solo can be reproduced in a shrieking soprano.

The sound-box went through a series of improvements, the object of the inventors being to render the diaphragm as sensitive as possible either to the sound waves of the selection being recorded, or to the vibrations transmitted to it from the record disc as the case might be. The diaphragm is now lightly held at its edges by hollow rubber gaskets, the fulcrum of the needle connecting the diaphragm to the needle point is formed by knife edges, and its movements are controlled by delicate springs. The standard sound-box of to-day is a very different thing from the early pattern shown in Figs. 1 and 4.

Improvements were further made in the means of conveying the sounds recreated in the sound-box to the ear of the auditor. The old air-tubes had disappeared to give place to a small horn, to the narrow end of which the sound-box was attached. As the popularity of the gramophone grew, the public wanted more sound for its money, and accordingly the size of the amplifying horn was increased. The increased weight of the horn necessitated that a special bracket should be provided to carry it, and the horn was accordingly balanced with just sufficient weight

on the sound-box end to keep the needle well in contact with the record. Thus the machine remained for a time ; but in this form it did not satisfy its patrons, for it did not do all that they thought might be expected of it. It was found in practice that the turn-table often did not revolve absolutely horizontally, that the record discs were sometimes not absolutely flat, and that the central hole was in reality, but seldom accurately in the centre of the disc. Owing to the rise and fall of the record as it rotated, the end of the amplifying horn also had to rise and fall, and owing to the eccentricity of the hole in the middle, the sound-box end of the horn was continually approaching and receding from the centre of the record, as it followed the sound line. In other words, the needle as it followed its path along the sound groove, in addition to transmitting the proper vibrations to the diaphragm, had also to move the whole mass of the amplifying horn. This had two injurious effects ; it impaired the reproduction, and it wore out the record.

The next step was to remove the amplifying horn to a short distance from the sound-box and to carry it upon a rigid bracket on the cabinet of the instrument, the sound-box being connected to the small end of the horn by a piece of tubing, which allowed the sound-box to move across the turn-table and also to be raised or lowered above the record. This arrangement offered the advantage that the weight of the horn was carried by the cabinet, and the record had not to overcome the inertia of the whole horn as before, but only had to move the sound-box and its connecting tubing (or sound-arm as it is called) when the turn-table was not horizontal or the hole in the record not central. But though this arrangement offered advantages in one direction, it was found to be accompanied by imperfection in another. The piece of straight tubing connecting the sound-box and the horn had a distorting effect upon the sound waves. Instead of these waves being able to expand

uniformly as they advanced, as had been the case in the old arrangement when they passed straight into the horn, they were forced to pass first of all through this straight pipe where the waves became distorted and acoustic interference was created. It was not until 1903 that patents were taken out on an invention which overcame this difficulty (See Fig. 5), the invention now known as the taper arm, the patent on which in this country was recently upheld in the Court of Appeal. The inventor had hit upon the idea of jointing the amplifying horn itself, so that while the horn could start immediately next the sound-box the latter could be moved with freedom without moving the heavy bell portion of the amplifying horn. The success of this invention was immediate and pronounced, and a tapering sound arm is now almost a *sine qua non*.

It was only to be expected that as the reproduction of the machine improved the form in which it was presented to the public would be made more and more attractive, and hence the handsome cabinets and pedestals with which the gramophone is furnished to-day.

Fig. 6 shows some of the various stages through which the machine passed. The lower instrument on the left-hand side will be recognised as the one before which the dog sat and listened to "his master's voice."

An important item in the reproducing apparatus is the needle. Instead of the same blunt point being used over and over again as formerly, a new needle is now recommended for each playing of a record. The reason is that the operation of playing a record wears down the fine point of a needle, so that by the time a record has been played through, the needle point has shoulders worn on it (Fig. 7) with only a central projection left to engage in the sound groove ; a point of this shape, when much worn, cannot give a good reproduction. The manufacture of gramophone needles constitutes a small industry in itself, and the number of processes through which the needles go, before they are ready for use, is surprising. Lengths are cut from the best steel wire, and are



pointed by emery wheels, rotating about 1,200 times a minute. The needles are cut off, and again the blunt ends are pointed. Some of the machines in use cut off as many as 200,000 needles daily. The needles are now hardened by tempering, being heated in open pans, almost to white heat, and then suddenly cooled; this is a most important process. They then have to be polished. This is done by packing the needles into bags or sacks and rolling them to and fro for days on a reciprocating table; the constant friction of the needles against one another, polishes them bright and smooth.

I will now deal with the series of operations which go to make a finished disc record of the Berliner or gramophone type. The person who is making the record sings or plays immediately before the mouth of a horn or funnel, the object of the horn being to concentrate the energy of the sound waves upon the recording diaphragm. At the narrow end

FIG. 7.

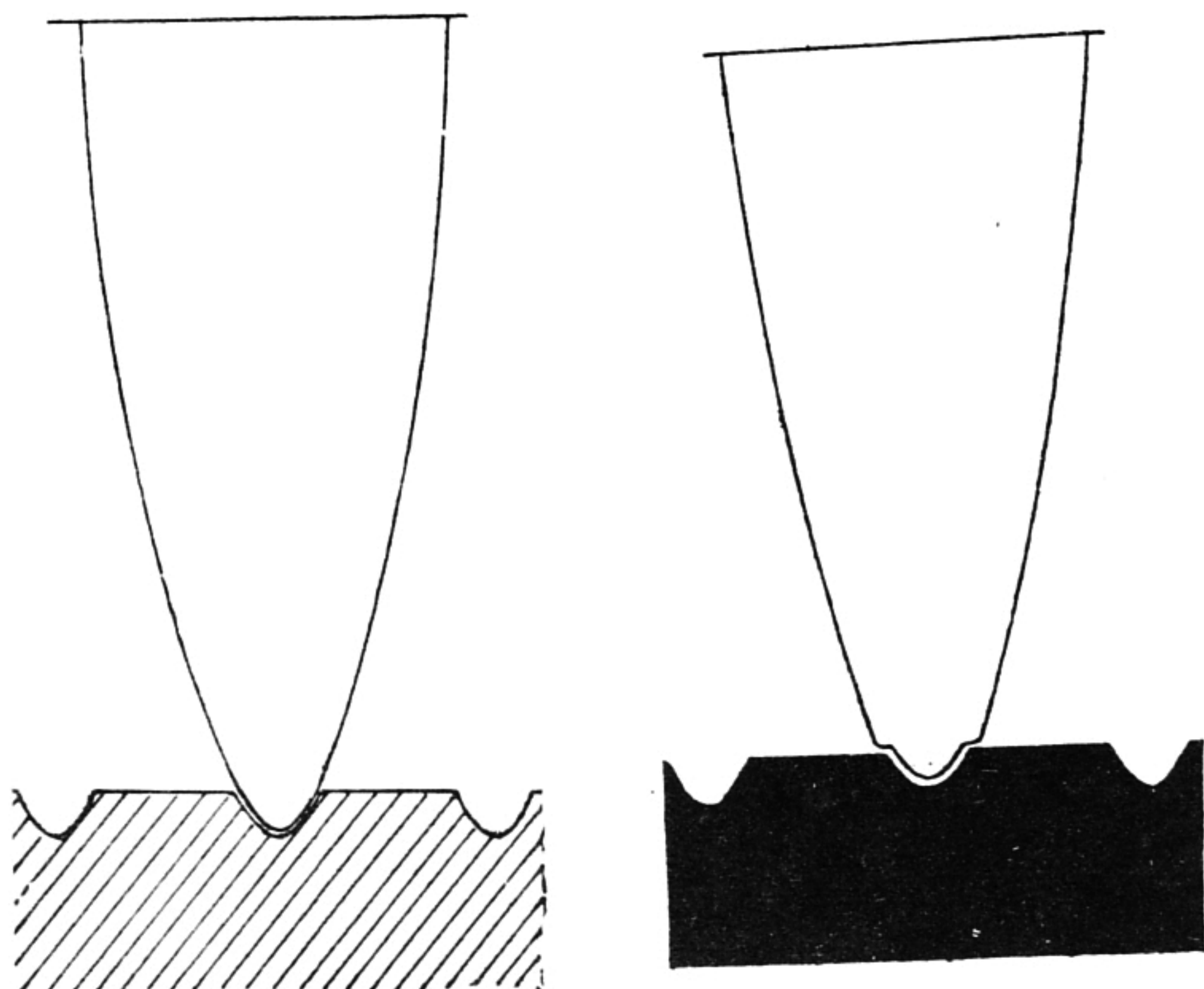
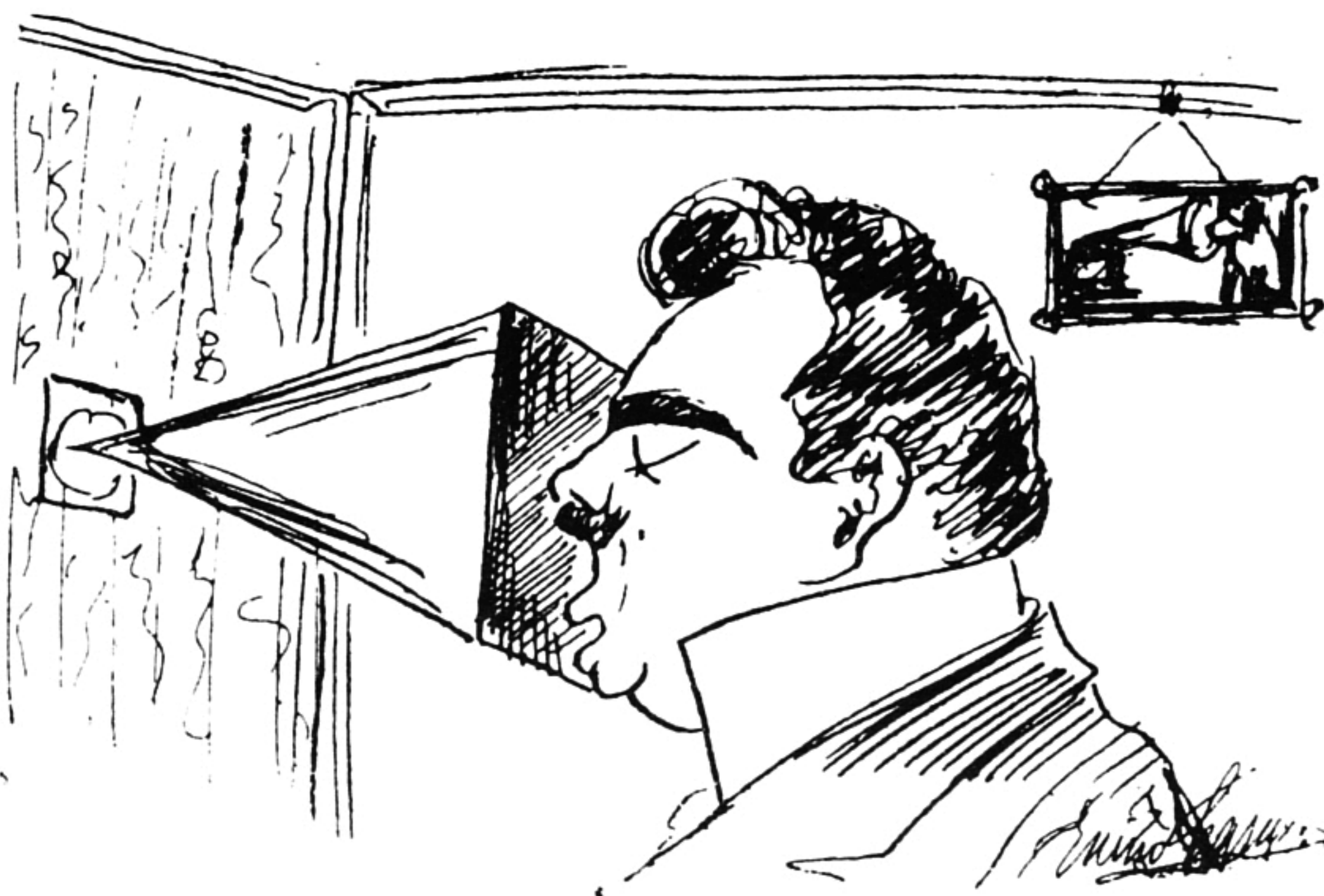


FIG. 8.



of the horn is the recording sound-box and machine and its attendant expert. The artist is on one side of a screen and the machine on the other, for in all the recording laboratories of talking-machine manufacturers the secrets of the operation of recording are most carefully guarded. I have here a sketch (Fig. 8)

drawn by a famous singer of himself making a record. The making of a good record is not so simple a matter for the artist as might appear; he often has to make several trials before he learns just how to sing into the trumpet, how near to stand, &c. When singing loud high notes he must not come too near the mouth of the funnel, as otherwise the vibrations will be too powerful and the result will be what is technically known as "shattering." When the artist is singing or playing

to an accompaniment another horn connected with the same sound-box is often provided so that the person of the artist may not obstruct the sound waves of the orchestra or other accompaniment.

The disposition too of the various instruments of an orchestra in the recording-room is of the very highest importance if the best results are to be obtained. The wooden instruments are arranged about four feet from the mouth of the trumpet—behind them are the brass instruments, and at the back the bass fiddles and drums.

On the other side of the screen a horizontal table, carrying a wax tablet, is rotated beneath the recording sound-box at a fixed and uniform speed, generally about 76 revolutions per minute. As the table rotates it also travels laterally at a fixed and uniform

Continued on page 823

Editor's Note: Mr. L. N. Reddie was engaged by the Gramophone Company at the period of his lecture to the Royal Society. He was granted many Patents for improvements to all aspects of the Gramophone and talking machines generally, either in his own name or coupled with that of the Gramophone Company.

BARTON MCGUCKIN. Your Editor assures a reader that this was a real person & not a pseudonym. He was an important Irish singer who by the time he recorded in 1905 was on the Administrative Staff of Covent Garden Opera House. He had only two recording sessions from which only two single-sided Zonophones were issued. Viz -

25th. February, 1905.	8th. March, 1905
1846e For the Green (Lohr) unissued	1849e Avenging & Bright (Moore) Zono. X42279
1847e The Minstrel Boy unissued	1850e Lagan's Log (Lohr) unissued
1848e Savourneen Deelish Zono. X42280	



\$5.00 Talking Machine

AS A HOME ENTERTAINER.

It has no equal. It plays music, it sings, it talks, it laughs, its music, both instrumental and vocal, is reproduced with all the beautiful expressions and melody as only the best bands, orchestras and singers can render them.

OUR GEM ECHOPHONE is well made, has a strong spring motor, with cut gears and pinions, governor and tension screw for regulating the speed, and runs two pieces with one winding, has a loud reproducer, and is equipped with all the latest improvements. There is no limit to the number of pieces it will play, and each piece or song can be played as often as desired. **SEND \$1.00** as good faith, and we will send the Talking machine, with one piece of music, hearing tubes, concert horn, and elegant wood carrying case with handle, by express C.O.D., subject to examination. If satisfactory, pay agent balance, \$4.00 and charges. Musical or "alking Records, 50c. each. Machine and 14 Records, \$10.00.

W. HILL & CO., 96 STATE ST., CHICAGO, ILLS.

When a company which wishes to compete in a certain market cannot afford to be licensed under the patents of already established firms, and does not desire to risk a foreshortened life of infringement (such as Talk-O-Phone or Hawthorne and Sheble) it will resort to extraordinary ingenuity in the design of its product. In the manufacture of a device for which which a variety of approaches will yield similar results, the field is open to anyone with imagination. It must be evident to anyone with a knowledge of player pianos that the incredible diversity of their mechanisms bears testimony to this.

In the case of talking machines, the possibilities are less profuse. Much hoopla was made over insignificant variations of acoustic apparatus (such as Columbia's "Analizing" reproducer), and nothing much changed about the basic needle-linked-directly-to-diaphragm technique. Much more was done to the shape of the horn, size of the turntable (or mandrel) and even the construction of the cabinet than was committed to alter that intrinsic and, seemingly, inescapable relationship. Hence, those wishing to avoid this plan had to accept the fact that their results were likely to be inferior. Whatever the results, however, advertising could be counted upon to promote them as a great scientific advancement.

I shall deal with four types of talking machine. Admittedly, there are more which might peripherally apply, such as the Bettini Micro-Phonograph and Victor/HMV Auxetophone. I have limited myself to these certain four because they are all alike in the respect that they have no 'direct' transmission of vibrations from the needle to a 'reproducing chamber' (if any). For the purpose of this article I shall define direct as being within a couple of inches. Since the first two machines have been given detailed coverage in issues of the American Phonograph Society Journal, I shall be more descriptive of the last two.

The 'Echophone' was a cylinder phonograph which appeared in 1898. The details of its manufacture are unknown to me, although it was being offered for sale by W. Hill & Company of Chicago, a city notorious for its fly-by-night talking machine firms. It was also shown as a premium to induce magazine subscriptions, etc. A small, open-works machine with a square

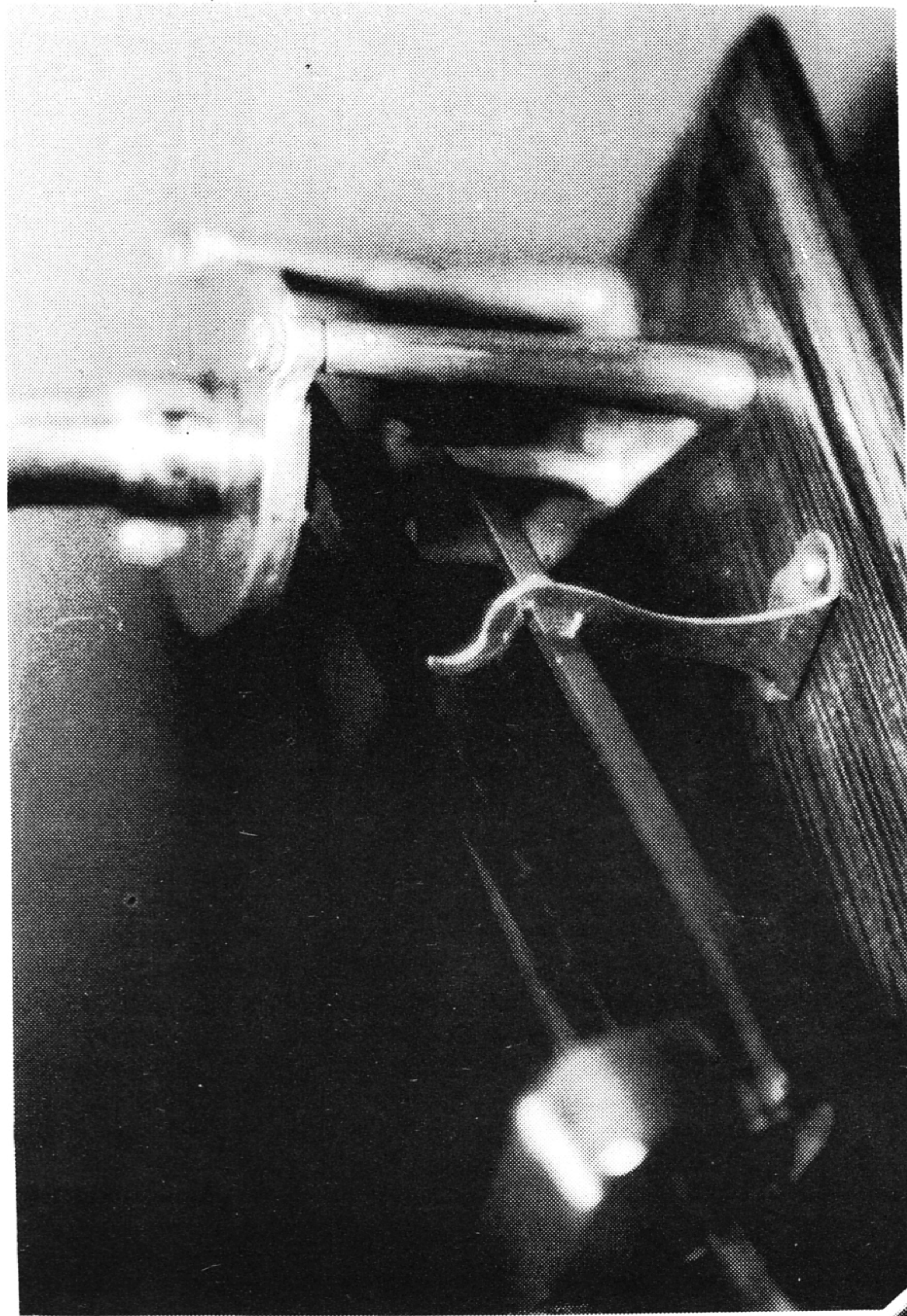
undistinguished case, its mandrel was, uniquely, made of wood. The 'stylus' was the rounded end of a long, thin shaft of glass which traversed the entire length of the machine and terminated in a tiny bellows. It was by the vibration of the air in this bellows that the sound was reproduced, which passed into either a small, conical horn or a set of eartubes. The machine rivalled the Columbia 'Q' at its low price of \$5.00, but was no match artistically. A complete description and photographs of the Ecophone may be seen in the Journal of the APS Summer 1973.

The 'United States Talking Machine' was a disc-playing device whose makers sold it expressly for use with the Gram-O-Phone records of Emile Berliner. Once again, one finds a Chicago address for the firm, of the same name. Offered in 1898, it alternately sold for \$3.00, \$3.05 or \$3.50. It, too, saw use for promotional purposes. The sound was transmitted from the steel needle up a long arm of wood. At the terminus of this arm was a coiled spring into which was pushed the end of a set of listening tubes. It was the vibration of the needle, the arm, the spring and, hence the air within the tubes which produced the effect. The turntable was rotated in the manner of the Columbia 'toy' phonograph: from the centre by means of an upright crank. A weight, hung from the wooden arm, could be adjusted to render greater volume by increasing the pressure upon the record. The whole was housed in a plain, suitcase-like cabinet. Further examination of the United States Talking Machine may be found in APSJ spring 1972 and spring and winter 1974.

Very little is known to me of the so-called "Detroit Talking Machine". Information may be construed from the advertisements which appeared for it. Produced by the Detroit Brass and Iron Works of that same city, it was apparently their autonomous creation based loosely upon the United States Talking Machine. Appearing in 1899, it undeniably benefitted from its immediate forebearer, described in the preceeding paragraph. Once again one recognises a long arm, either of wood or of metal, at one end of which is held the steel needle and at the other end of which is found a little, conical horn such as seen on the Ecophone. The vibrations are transmitted as in the United States machine. A further similarity between the two is an adjustable weight, here sitting atop the 'tone arm'. The body of the machine is fashioned entirely from metal and seems lightweight. A rather distant looking young lady, operating it, must hold it to keep it from sliding around. The turntable is, again, revolved by means of a central handle. The public is advised that it is 'made in a strong, substantial manner' and is, in fact, 'a handsome ornament'. For the incredible figure of only \$1.98 it would be sent carriage paid. No mention is made of obtaining records from the National Gramophone Co., in New York, and it may be assumed that Berliner's little discs were widely enough disseminated by this time to make selections to fuel the Detroit Talking Machine fairly easy to find. How greatly enhanced would be this article if one could still 'write for a free descriptive booklet'.

The final machine appeared much later on, and was of a totally different ilk. Far beyond the standards of a toy or premium, it successfully exploited its unusual design. Indeed, I find it to be very nearly the scientific achievement under which it was promoted.

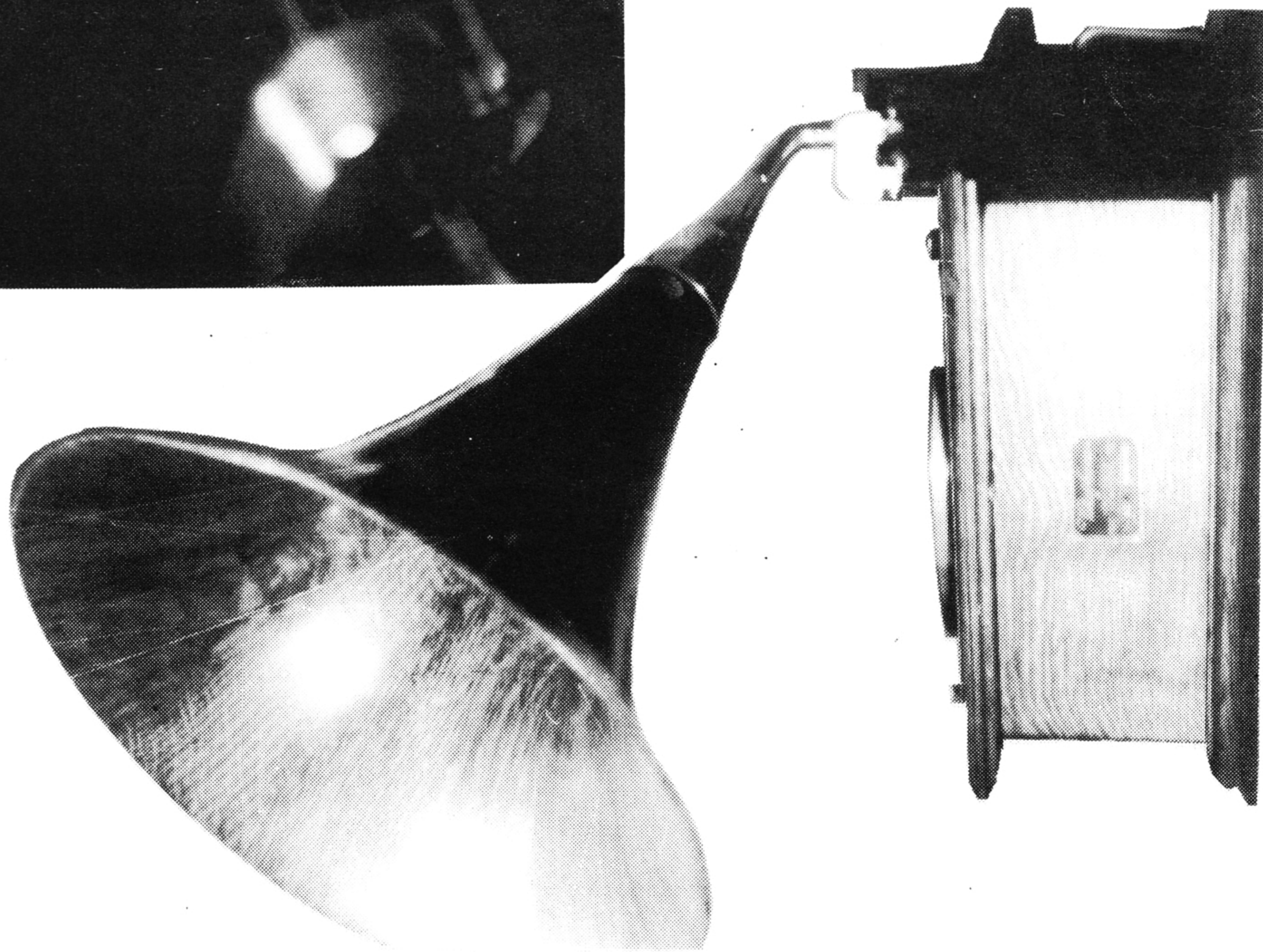
In the early 'teens, the 'Vitaphone' was offered by the company of the same name, in Plainfield, New Jersey. The use of this trade name is not to be confused with an early imitation of the Berliner Gramophone or with various methods of coupling sound and motion pictures, the last of which is well known for its success. The New Jersey firm offered a number of disc phonographs, including uprights in the derivative "Victrola" vein, table mode models and traditional external horn styles. It is interesting to note that these last were



The bizarre reproducing mechanism of the Vitaphone



Vitaphone identification plate



A Vitaphone with a 'Music Master' oak horn

DETROIT \$1.98 Talking Machine



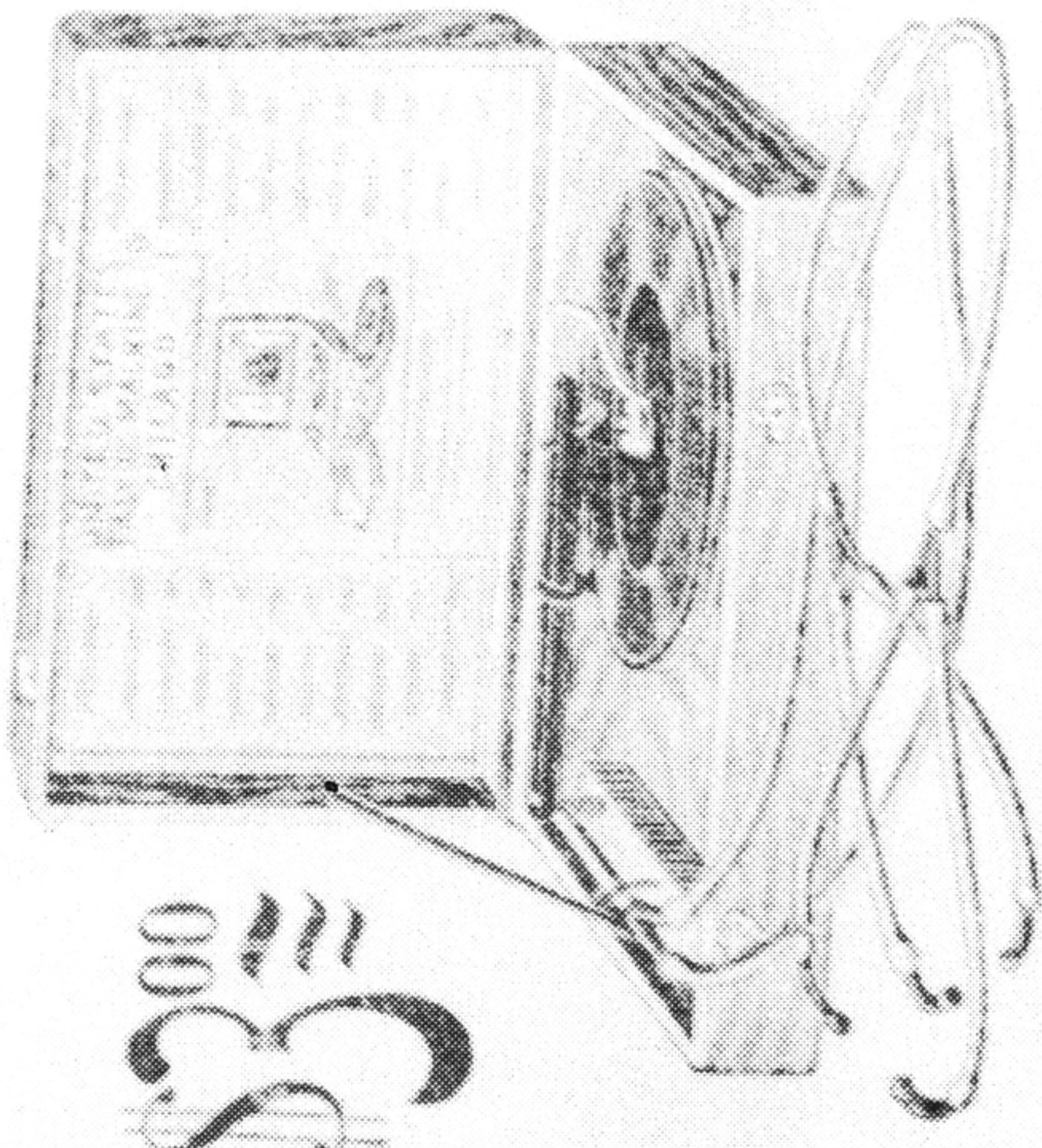
Why pay more when the **Detroit \$1.98 Talking Machine** will use flat records and entertain a whole room-full of people just as well as an expensive machine. Everything made in a strong, substantial manner, highly polished, nickel plated—a **handsome ornament**. One record with machine; extra records for each. **Just the thing for a Christmas present for young or old.** Ask your dealer for it, or write us. Our record of price, \$1.98, **complete machine sent carriage prepaid.** Write for free descriptive booklet.
Detroit Brass & Iron Novelty Co., 28 Griswold St., Detroit, Mich.

The Detroit Talking Machine of 1899

Talking Machine

It will talk, laugh and sing!
For amusement, "It's the thing."

\$3.00



IT SPEAKS FOR ITSELF.

\$3.00 buys the United States Talking Machine, complete with record. Sent anywhere in the U. S. by express, neatly encased in a hardwood, well finished case. Weight, packed, 4 lbs. Remit by bank draft, express or postoffice money orders to **UNITED STATES TALKING MACHINE CO.** Postoffice Bldg. 838 "C" Dearborn St., Chicago

The United States Talking Machine as it appeared in 1898

already a little outmoded and, ironically to the present day afionado, were sold the cheapest! Most expensive were the uprights, whose horns were, uniquely, concealed in their lids. As before, a long, wooden arm is integral. The Vitaphone's is finely finished, supported by a steel superstructure and surmounted by a large, nickel-plated, non-movable weight. At its one end is the needle, at its other is a tiny spring, constantly kept under tension by a taught length of cat gut. This assembly is, in turn, linked by another piece of gut to a stationary mica diaphragm, housed in what resembles a conventional disc reproducer turned face down. This is held above the top of the machine by metal braces, and the horn originates in a narrow channel directly above this reproducing chamber. The sound vibrations travel the length of the wooden arm, where they reach the diaphragm via the cat gut-spring combination and, thereafter, reprodce in the ordinary fashion. It was claimed that "one can feel the every tone vibration throbbing through this wooden arm.... instead of being directed downwards, it is allowed to float upwards as is natural with sound waves." Physical science aside, the tone produced is, indeed, most pleasing and the volume is good. In addition, the clever system permits the playing of lateral or vertical cut records, even Edison Diamond Discs, with no other change than that of the needle. There is an obvious similarity between the manner of reproduction in all four of the machines I have here described, but in the Vitaphone we find the concept brought to the level of success.

Edison "Wonder Cures"

David Trigg

The unusual advertisements overleaf appeared in the 1890's in the American popular press. They show the diversity of Edison and his many talents. According to the 'EDISON' Electric Garter advertisement - it was just as wonderful as his telephone and electric light - and even put an end to dwarfed limbs! His 'Polyform' which was prepared by the Menlo Park Manufacturing Co, in New York, cured nervous pains, no doubt after the Electric Garter had shocked the system! The companies marketing these were presumably taking advantage of Edison's name and reputation, as they are typical of the 'quack' cure-all remedies of the Victorians.

EDISON PHONOGRAPH MONTHLY

A chronology of Edison's heyday - 1903 thru 1916. Send SASE for information to Wendell Moore, 33 Arctic Springs, Jeffersonville, Ind. 47130. USA or,

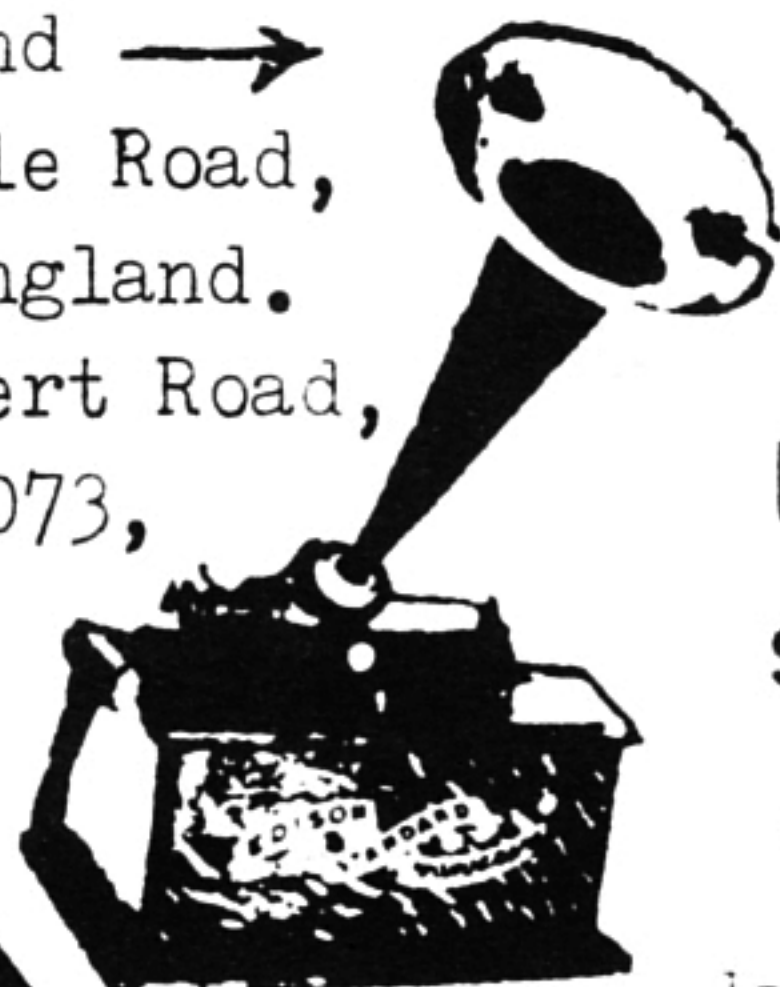
Only Yesterday, Holland →
Ernie Bayly, 19 Glendale Road,
Bournemouth BH6 4JA, England.
Tony Savery, 42 Cuthbert Road,
Reservoir, Victoria 3073,
Australia.

THE GRAPHIC

An inexpensive record publication. . . not a cheap one! send for details. NAPCO, 133 Main Street, St. Johnsbury, Vermont. USA 05819.

WANTED

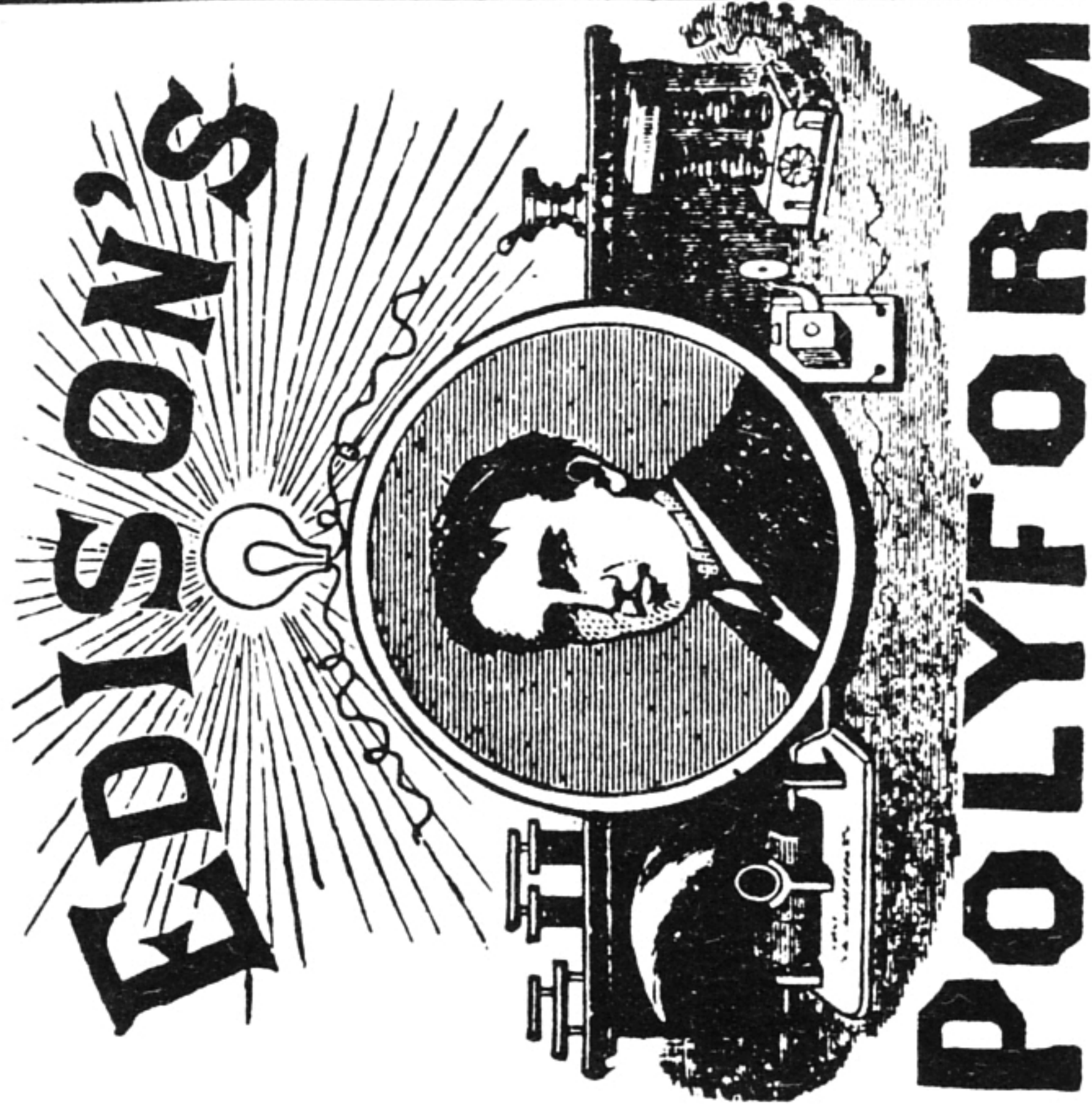
English & French cylinder boxes, needle tins, record catalogs, cutters, etc. for display. Russ Brunning, 4541 W. Altadena, Glendale, Arizona 85304.



ONLY YESTERDAY

NOSTALGIA: van Opera tot Jazz op LP'S.
speeldozen, mechanisch zingende vogels,
draaiorgels, pianola-rollen en boeken

Jan Hendrikstraat 72, 's-Gravenhage, Holland.



EDISON'S POLYFORM

CURES

**RHEUMATISM,
NEURALGIA,
SCIATICA,**

And all Nervous Pains.

PREPARED BY THE

Menlo Park Manufacturing Co., New York.

PRICE, \$1.00—SOLD BY ALL DRUGGISTS.

As Wonderful as the Telephone and Electric Light.

*Beauty!
Grace!
Symmetry!*

Foot and Ankle.

Every Lady, Gentleman, and Child should wear

*Health!
Activity!
Vigour!*

The EDSON Electric Garter.

They develop the ANKLE and FOOT into perfect form, support and strengthen the LIMBS, add MARVELOUS GRACE and elasticity to the step, give GREAT EASE and COMFORT in WALKING, DANCING, SKATING, ROWING or RIDING, maintain and excite healthful circulation, PUT AN END TO ILL-SHAPEN and DWARFED LIMBS and ANKLES, dispel GOUT, RHEUMATIC, and NEURALGIC PAINS, subdue all cramps and stiffness of joints.

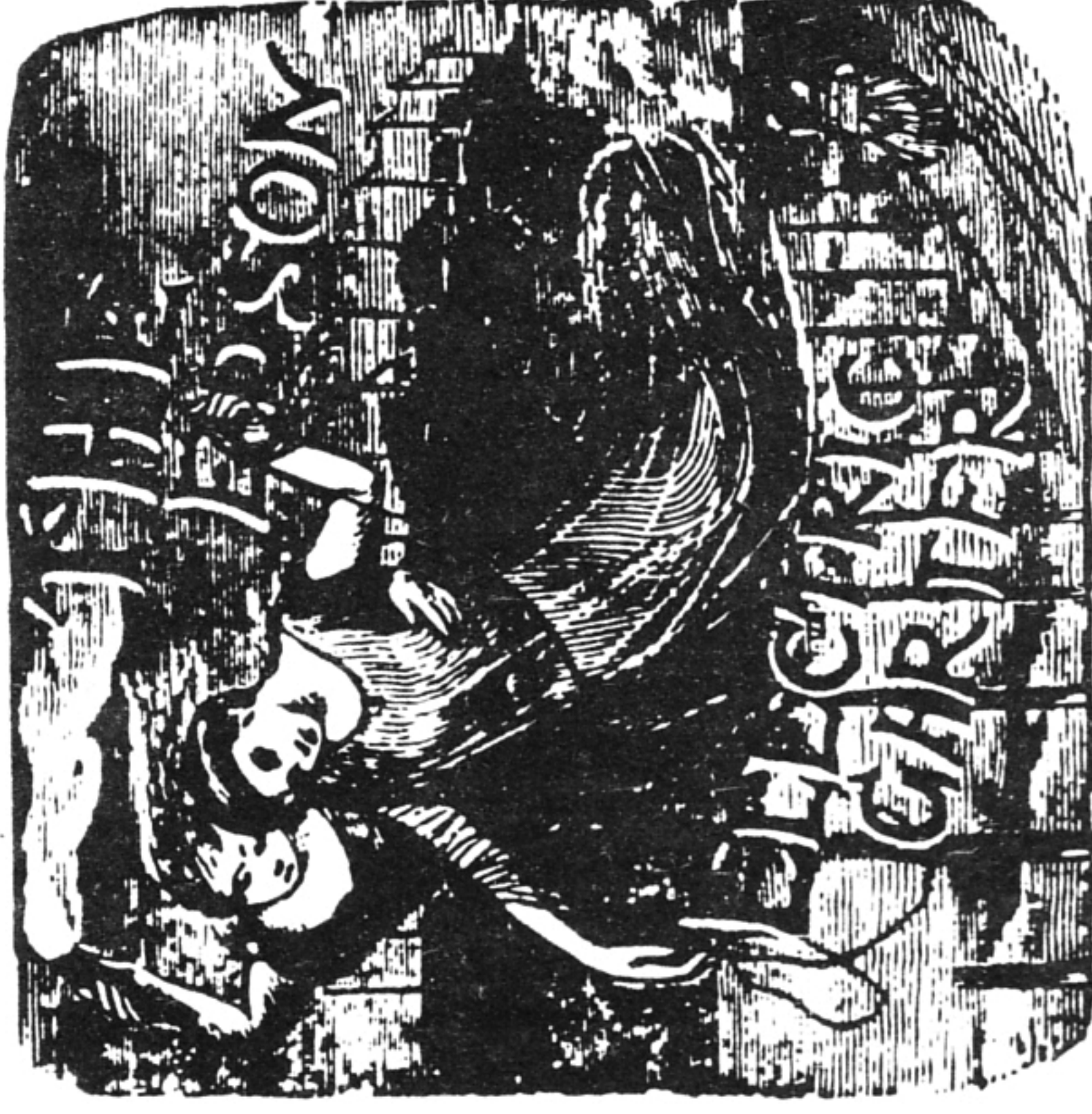
Wholly superseded not only the costly Galvanic and Magnetic Appliances of the day, but every other form of Garter for Ladies' Gentlemen's, or Child's wear. They are worn with all the comfort of the best known Garters. Not more expensive. Beautiful in appearance. Adjusted in a moment. Finished in Finest Silk and Cotton Fabric (usual Colours) with Stud and Buckle Clasps. Are lasting wear.

Like the Telephone and Electric Light, it has taken time to develop, but is now the success of the day. PRICE:—The Electric Garters in Finest Cotton Webbing Ladies' or Gent's Size, 75c.; in Silk, \$1; Child's Size, (up to eight years) 50c.; in Silk, 75c.

Remit by Post-Office Orders or Registered Letter.
Address

LONDON ELECTRIC FABRIC COMPANY,

No. 144 Duane St.,
P. O. Box No. 4048. **NEW YORK.**



Björn Englund



The Lyrophon-Werke of Berlin began issuing discs in 1904 (they had already manufactured cylinders for a few years). The following year the Gyllenberg & Rosengren company of Stockholm (a Swedish cylinder pioneer) became their Swedish agent. Probably in May of that year they recorded some 400 disc-sides in Stockholm. The first release seems to have come in November of that year. The Swedish issues were in the general series in the 1500-2054 block. Already in 1906 the number 1983 had been reached, but not all numbers in this block were Swedish issues - for instance, 1701-1850 were German. That same year the first double-sided discs were issued. Lyrophon thus preceded HMV in Scandinavia by more than two years. The records were issued in two sizes:



NILS R. LANTZ

TELEFONANLÄGGNINGSAFFÄR

Rikstelefon : 94 83

STOCKHOLM

Allm. 70 04 & 101 19

28 JAKOBSGATAN 19

BIRGER JARLSGATAN 19

(vid Rödbodtorget.)

(vid Sturepl., hörnet af Lutternsg.)

Lyrophoner & Lyrophonplattor

Återgifva tal, sång och musik
fullt naturtroget.

Stor repertoar.

Billigaste priser. Egna insjungningar.

==== Förstklassiga =====



Ringledningar & Lokaltelefoner.

"small discs" of $17\frac{1}{2}$ cm. (app. 7-inches) and large discs of 25 cm (app. 10-inches). To the best of my knowledge, Lyrophon never issued any 30 cm. (app. 12-inches) discs in Scandinavia. Oddly, I have found a few 35 cm (app. 13 $\frac{3}{4}$ -inches) discs! These were never listed in the catalogues and may have been available to special order only. They may have been intended for cinemas or similar places. In 1907 Nils R. Lantz, who had been one of the singers on this label, took over representation. (See the advertisement on the previous page) He had a firm marketing gramophones, telephones and records. He was also the first to offer his recording facilities for use by private individuals. The last Swedish Lyrophon releases came in 1907 and though the new discs listed were of foreign origin and Lantz continued to issue Lyrophon catalogues and supplements until 1912, no further local recordings were made. Probably in that year Lyrophon was taken over by the Carl Lindström firm in Berlin (though the German Patent Office does not list the official take-over until March, 1916).

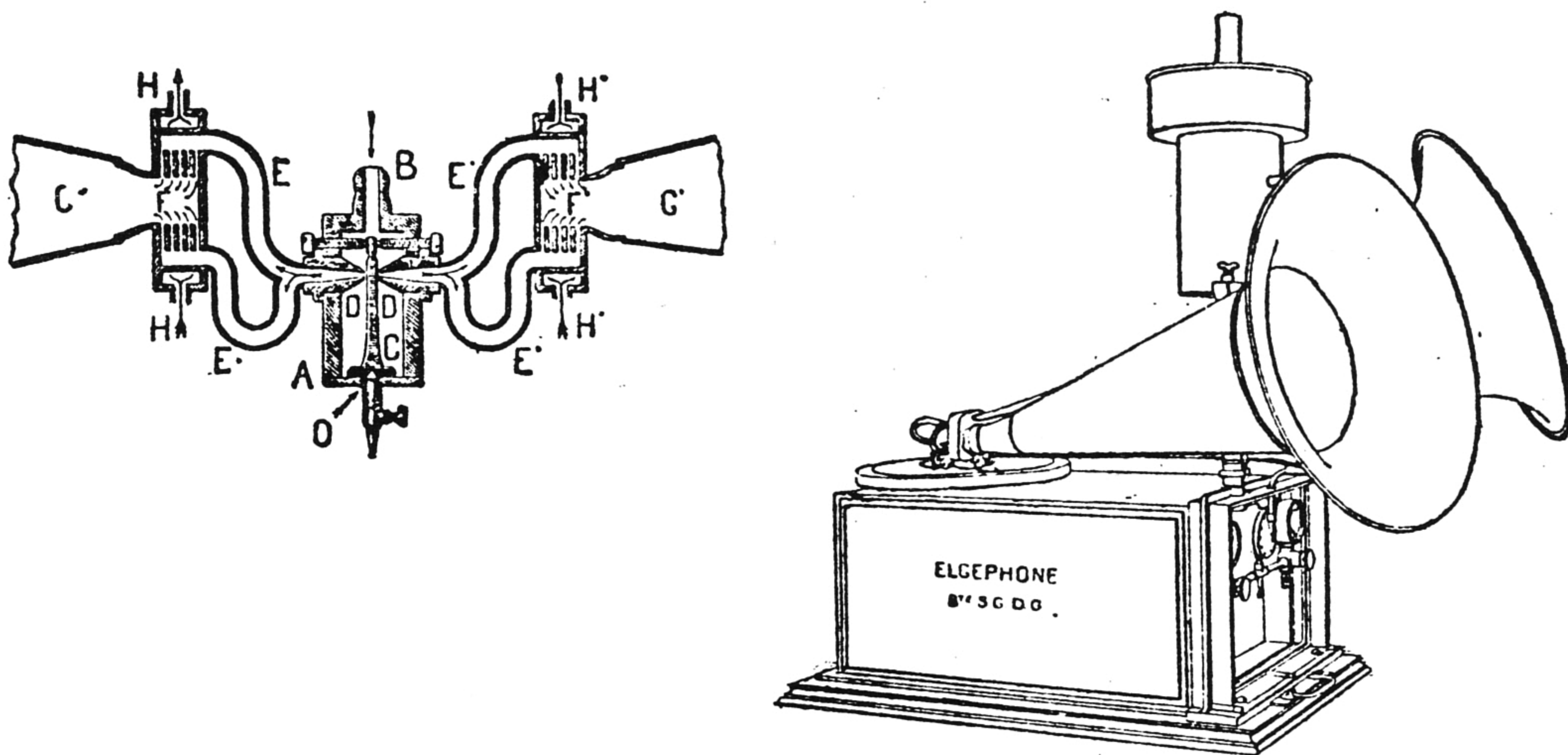
Several well-known Swedish opera singers recorded for this label, the best-known being Anna Hellström and John Forsell. They wrote testimonials used in Lyrophon advertisements dated May, 1905, and thus giving a clue to recording dates. (see postscript p.822)

THE ELGEPHONE

GUSTAV STRAHL

(Selected from the Phonographische Zeitschrift by your Editor & ably translated by John Want wearing his "translator's hat"! The original article appeared in September, 1906)

Although sound producing flames - indeed even complete musical instruments based on gas flames are known, the Elgephone as the latest gas concert is named, is already of the greatest interest on account of its simplicity.



This comprises a small container (A), into which the gas flows through an upper opening (B). This container has on the side two exits (DD) located exactly opposite each other, between

which a movable suspended disc (C) is located, almost at its centre and in such a way that in the neutral position it covers up neither of the two openings. A continuation of the disc passes through the lower part of the container so that the plate can move at will from the outside to the right or left of its neutral position. The gas coming out of each of the side openings is lead to a burner (FF) via flexible hoses. This burner consists of a short pipe, closed on one end, with numerous fine openings on the inside, at each of which a little flame is arranged to burn.

For cooling purposes a water jacket (HH) of special construction is arranged around the burner. At the open side of the burner, indeed of the burners for one stands on each side of the little gas pressure vessel, a funnel-shaped extension piece (GG) is attached. The entire apparatus therefore consists of a small pressure vessel into which the gas enters from the top, a vertically suspended disc which causes the gas to be led to the exit holes on the sides and there burnt with little flames, of course without making any sound so long as the disc is still. If a stylus is attached to the lower extension (D) of this plate and a gramophone record is placed underneath so that the vertical plate is set into lateral movement, then the burners at once reproduce the recorded piece and with a strength that cannot be achieved by the usual methods of today. This is therefore another representative of the class of power sound machines, which in the opinion of connoisseurs, open up totally new areas.

But quite apart from the commercial aspects, the physical side of this apparatus is of the utmost interest. As long as the suspended disc is in its neutral position the high pressure gas flows uniformly to both sides and out of the exits to the burners, there to be burnt. If the disc is set into vibration by the stylus and thereby approaches one or the other exits so that a variation in the supply of gas to the burner takes place a sound is set up and that is of course the sound which has been recorded on the gramophone record - just as in the case of "singing" arc lamps the vibration of the telephone diaphragm regulates the height and length of the electric current precisely in relation to the sound wave. In the case of the Elgephone the inside of the little pressure vessel takes the place of the diaphragm. However while the telephone diaphragm is set in vibration by vibration in the air in contact with it, in the case of the Elgephone the vibrations of the disc hinder the flow of high pressure gas in precisely defined relationships, with the result that in the burner the speed of gas exit is influenced and in turn the intensity of the flame as well as its size and heating power.

As the outside atmosphere is known to exert a force of one atmosphere on all objects, so, particularly as the horns stand horizontally (an escape of air which has become lighter through warming cannot therefore take place in sufficient quantity) a zone of compressed air builds up as a result of expansion of the heated air which reacts more strongly against forces in a particular direction and thereby transfers them more intensively into the surrounding. If the heating power is reduced as a result of reduction of the gas flow to the burner then the expansion of gas in both burner and funnel is reduced and the external one of compressed air (air cushion) is drawn in with greater speed. If at the same moment the flame expands, this is promptly expelled. As the strength of the sound is dependent on the strength of the air vibration the effectiveness of this apparatus is quite simply explained. The amplification of the sound is achieved from the increase of the volume of gas flowing out as a result of intensive warming.

* This machine was a product of the Gaumont company of France, which one assumes to be the same as that which made 2-minute wax cylinders. Who can tell us more of this Company (apart from its film activities)?

Translator's Note: The first part (not included) of this article deals with the excessive noise from gas burners using pressure gas "for lighting streets and squares". This seems to have been different from the conventional coal gas supplies in England of that time, which were delivered under very low pressure. Can any of our German readers explain?

Editor's note: It is interesting that the Auxetophone, Kitchen's singing flames, and the Elgephone, all strove to increase the volume from a record by physical means, the thermionic valve still not having been invented.

EDISON DISC MASTERS BY RAYMOND WILE



Part 17. Continued from page 660.

All recordings in this section were recorded in New York.

30.Dec.12.10"	2071 S1, S2, S3	Rose Mousse - Entr'acte valse	String Orchestra
		Issued on 50086	
30.Dec.12.10"	2072 S1, S2, S3	Impassioned Dream rejected	String Orchestra
31.Dec.12.10"	2073 S1, S2, S3	Huguenots - My noble knights I hail you Elizabeth Spencer	
		Accepted, then rejected	
31.Dec.12.10"	2074 S1, S2, S3	Romeo & Juliet - Waltz song	Marie Kaiser
		Issued on 80103. "Blasts". Deleted from catalogue	
	2075 sample	A dream	R. H. Graham
2.Jan.13,10"	2076 S1, S2, S3	Let me dream again	Elizabeth Spencer & Chor
		Hold, then rejected	
2.Jan.13,10"	2077 S1, S2, S3	Loch Lomond	Marie Kaiser & Chorus
		Hold, then rejected	
3.Jan.13,10"	2078 S1, S2, S3	Montrose - two step	National Promenade Orch.
		Issued on 50075	
3.Jan.13,10"	2079 S1, S2, S3	It blew, blew, blew	National Promenade Orch
		S2 approved & issued on 50076	
6.Jan.13,10"	2080 S1, S2, S3	Dream of home	Elizabeth Spencer
		Issued on 80104	
6.Jan.13,10"	2081 S1, S2, S3	Crucifix	Harry Anthony & Charles Harrison
		Issued on 80112	
7.Jan.13,10"	2082 S1, S2, S3	Santa Lucia	Paul Dufault & Chorus
		Rejected by Edison	
7.Jan.13,10"	2083 S1, S2, S3	Maritana - Scenes that are brightest	Albert Weston
		Issued on 80116	

(Continued on page 813)

October, 1976

Part three.



A FONOTIPIA FRAGMENTIA by H. FRANK ANDREWS

THE d'ERLANGERS

Before resuming the main story I would like to insert a few details about the d'Erlangers and especially of Emil Beaumont d'Erlanger who, until now, has generally been accepted as the "genius" who founded the Societa Italiana di Fonotipia, Milano, disc records. This was not so, as you have already read.

Baron Emil Beaumont d'Erlanger was born in Paris, France, of a German family. In 1891 he became a naturalised British subject, at which time his name was given as Emil Beaumont von Erlanger. In an encyclopaedia of 1921 he was described as a British financier. The "von" had been replaced by the "d".

Frederick Alfred von Erlanger and Francis Rudolph von Erlanger became naturalised British subjects in 1894. Frederick was noted as an opera composer.

Besides being the titular head of "Emil Erlanger & Company", Baron Emil B. d'Erlanger was also the Managing Director of "The Channel Tunnel, Limited".

1907

ALFRED MICHAELIS, GENERAL MANAGER OF FONOTIPIA LTD., IS REPLACED.

It is not known whether the state of fear and trepidation which Michaelis felt about the security of his position within Fonotipia Limited, (which he had expressed to others) had been well founded, or whether his health had suffered another relapse, but it is a fact that on 30th. January, 1907, an Agreement was entered into appointing Emil Rank as the new General Manager for Fonotipia Ltd. Mr. Rank was also to represent this company on the Board of Managers of the International Talking Machine Co. m. b. H., the recorders and manufacturers of Odeon and Fonotipia recorders manufacturers of Odeon and Fonotipia recordings, and he was

also designated "Consiglieri Delegate" on the Board of the subsidiary of Fonotipia Limited in Milan, the Societa Italiano di Fonotipia S. A.

Under the terms of this Agreement, Rink was required, as from 1st. September, 1907, to reside in either Berlin or Milan with a salary equal to £500 per annum, plus an annual bonus which would be equal to the dividend paid each year on twenty 1,000-marks shares in the International Talking Machine Co. m. b. H., but which sum was not to exceed £300 in any one year, and plus another bonus equal to a dividend which would be paid on two thousand £1 shares in Fonotipia Limited. His term of office was to run for four years from 1st. September 1907, at the end of which he was to receive two thousand fully paid up shares in Fonotipia Limited. These he duly received on 31st. August, 1911.

The signature of Mr. W. Cyril Thompson, a new Company Secretary for Fonotipia Limited, appeared on a document dated 5th. February, 1907, submitted to the Registrar of Joint Stock Companies who was informed that both Alfred Michaelis and Emile Neiderhopheim had resigned their staff positions with the Company, their posts having been filled by Emil Rink and Charles Cotsford Bowlby respectively.

In February, 1907, Messrs. Sterling and Hunting, Ltd. re-affirmed that the tenor, Alessandro Bonci, who was then appearing in New York, had granted Fonotipia Limited the exclusive rights to record his voice, also, through a number of advertisements, one of which appeared in the "Daily Mail", they offered a double-sided Fonotipia record for only four shillings and sixpence. This was the disc containing Zenatello singing "Vesti la giubba" (I Pagliacci) and, on the reverse, Talexis and Longobardi singing the "Miserere" (Il Trovatore).

Mr. Frederick M. Prescott, the founder of the International Talking Machine Co. m. b. H., was, in April, 1907, reported back home in the United States of America, having completed his agreed "Season's" work in Berlin, which he had been prevailed upon to perform after he had sold his own shares in his company to the d'Erlangers. Thus both the founders of Odeon Records and Fonotipia records disappeared from the scene at almost the same time.

A return of shareholders in the International Talking Machine Co. m. b. H. of 24th. May, 1907, revealed that, by power of proxy of 21st. May, Mr. Emil Rink held shares to the value of 217, 000 marks for Emil Erlanger & Co. of 20. Bishopsgate Within, London E.C., and by general power of attorney of 24th. August, 1906, held shares to the value of 5,000 marks, but the second largest stockholder was Herr Cronbach with 36,000 marks, followed by Herr Süssapfel with 15,000 marks. Other large stockholders were Herr Schaberow with 10,000 marks and Herr Max Knopf, who had become a manager on 31st. May, with 5,000 marks.

Sterling and Hunting Ltd. advertised another supplement of Fonotipia records in June, 1907, introducing "New Artistes" to the British record-buying public with the names of Amadeo Bassi, Feruccio Coradetti, Nina Frascani and the first sides to be issued of the Chorus of the La Scala Theatre, Milan, recorded solely by themselves. Coradetti was said to have been praised by composers such as Mascagni, Leoncavallo, Cain and Cilea. Sardou, the French dramatist, was on the British Lists for the first time. 12-inch diameter discs of the Italian Royal Marines Band were issued.

It was reported from Germany that the Odeon company had been successful in the German Courts against the Deutsche Grammophon A. G. (Sister Company of the Gramophone & Typewriter Ltd.) which latter thereby lost on its rights in patent 162213 for a tone-arm.

Mme. Miclos' piano recordings were featured in the July Fonotipia supplement of Sterling

This Coupon

will bring you a Sample
"FONOTIPIA" Record, valued
at 12/-, for 4/6.

We believe that there are a large number of owners of Disc Talking Machines who would willingly purchase Grand Opera "FONOTIPIA" Disc Records if they had an opportunity of obtaining a sample record to try over on their own machines at home. We now give them that . . . opportunity of securing one of the finest . . .

"FONOTIPIA"

Double-Sided Disc Records

ever produced, and at a price that is no more than commonplace records!
"FONOTIPIA" RECORDS CAN BE PLAYED ON ALL UP-TO-
DATE DISC TALKING MACHINES.

This Record is Double-Sided and Contains the
"Miserere Duet," from Il Trovatore, by Amelia
Talexis and Longobardi, with Chorus of La Scala;
and on the other side, "Vesta la Giubba"
(Pagliacci), by Giovanni Zenatello, Tenor.

"FONOTIPIA" RECORDS MAY BE PLAYED ON ALL UP-TO-DATE DISC MACHINES.
ONLY ONE RECORD CAN BE SUPPLIED TO EACH APPLICANT.

Orders will be Executed in Rotation.

Mark
Envelopes
"Sample
Dept."

STERLING & HUNTING, Ltd.,
14, Hamsell Street, London, E.C.

T.M.N.
1307.

Only one Sample
Record can be sup-
plied to each Person.

To STERLING & HUNTING, Ltd.,
14, Hamsell St., LONDON, E.C.

Please send me the Sample
FONOTIPIA RECORD.

enclose Postal Order, 4/6.

(Stamps not accepted).

Name.....

Address

Send
to-day.

1st. March, 1907.

and Hunting Ltd. That month an adventurous stunt was organised to give publicity to Bonci's records, to coincide with his appearance at the Royal Opera House, Covent Garden.

Spaces were booked in three important papers for the Monday following Bonci's appearance at the Royal Opera House, Covent Garden, on Saturday 13th. July and special arrangements were made for the receipt of 'late copy'. Mr. Louis Sterling and a member of his staff having witnessed Bonci's performance, immediately left the Opera House, took a waiting car to the offices of 'The Daily Mail' and there wrote their article about Bonci's performance and reception. They delivered similar articles to two other papers on the Sunday. The review in the papers was accompanied by the version of Sterling and Hunting Ltd. for Fonotipia Ltd. which also included a listing of Bonci's recordings of arias from the opera.

THE FONOTIPIA LABEL REGISTERED AS A TRADE MARK

A representation of the Fontipia Record label was filed at the Patent Office in London on 8th. July, as an application for a registered trade mark to the "Societe Italiana Fonotipia Milano" 4. Via Dante, Milano; in respect of talking machines and records. Notification of Registration was made in the October following.

The British Agency, Sterling and Hunting, Limited, moved its registered offices to 13, City Road, London EC. at about this time, the Registrar was notified on 10th. July.

In August, 1907, Messrs Ashton & Mitchell opened their 'Royal Agency' in Bond Street, London W. especially devoted to Fonotipia and Odeon Records, and contemplated doing likewise in Sloane Street and Gloucester Road, London SW. The Musetta Player Piano Company, Ltd. at 83. Oxford Street, London W. also took an agency for Fonotipia and Odeon records.

During this month the Barons Emile and F. A. d'Erlanger bought a further 5,000 shares each in Fonotipia Limited.

1908 and FONOTIPIAS HAVE ORCHESTRAL ACCOMPANIMENTS

In the early spring of 1908 news came from Italy that Umberto Giordano, the musical director for Fonotipia discs had finally and successfully organised orchestral accompaniments for the vocal recordings being made in the Milano studios. In Britain the year had opened with Odeon Records issuing a recording "The Odeon Waltz" composed by the famous Johann Strauss junior, the score of which had been given to the proprietors of Odeon Records by the late-composer's widow. The piano score of the "Odeon Waltz" was given to every purchaser of three Odeon Records, or two Fonotipia band records, or one Fonotipia vocal record.

It was reported in March, 1908, that Herr Jacques Grünsweig, a Manager of the International Talking Machine Co. m. b. H. had left Odeon Records to join the talking machine and cinematograph manufacturers, Carl Lindström G. m. b. H. which was soon to be reformed as Carl Lindström Aktiengesellschaft.

In April it was announced that "owing to an important development" Messrs. Sterling and Hunting, Ltd. were to discontinue releasing Odeon Records in double-sided format and offered their existing stocks at three shillings and sixpence each for the standard concert-size five shilling record. At the same time the Company separated from the Russell Hunting Record Company, Limited. Mr. Louis S. Sterling was designated "Commercial Manager", and the new Company Secretary was George Frampton who came from the Emile d'Erlanger banking house. recording engineer was Arthur H. Brookes and the Acting Manager was Mr. S. P. Turner.



FONOTIPIA

MILANO
Via Dante, 4

Fornitori di S. M. la Regina Madre

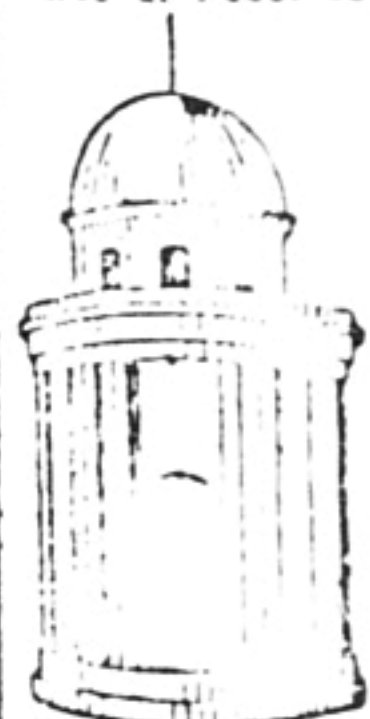
DISCHI FONOTIPIA

A DOPPIA FACCIA

con accompagnamento a **Grande Orchestra**
"Celebrità Mondiali,"



Marca di Fabbrica



Odeon

DISCHI ODÉON

con accompagnamento d'Orchestra

Bande Celebri di tutto il Mondo Dischi a doppia faccia piccolo da 19 cm. £. 3.50
grande da 27 cm. £. 7.00

Marca di Fabbrica



Jumbo

DISCHI JUMBO

Varietà, canzonette napoletane, ballabili, ecc.

Il miglior disco a buon mercato.

Disco concerto a doppia faccia da 25 cm. **L. 4.50**

An Italian announcement of orchestral accompaniments.



FONOTIPIA

FORNITORI DI S. M. LA REGINA MADRE

REGALI per il NATALE

PREZZI Dischi FONOTIPIA a doppia Faccia **CELEBRITÀ**
NUOVI con accompagnamento a grande orchestra **MONDIALI!**

NOVITÀ! Dischi "ODEON,, "JUMBO,, a sonorità triplicata

Chiedere Cataloghi e cartoline illustrate (Serie **T**) che si spediscono GRATIS dai principali negozianti del genere e dalla SOCIETÀ ITALIANA DI FONOTIPIA, **Via Dante, 4, MILANO.**



Ultimo Perfezionamento:
MACCHINA "BELLINI (F)!"
LIRE 137,50
LA MIGLIORE CHE ESISTA.

December, 1908. This advertisement shows 'Three Times Leader' - Tripletone/Starkton Odeons and Jumbos.

802

In May, 1908, Sterling and Hunting, Ltd., which had two Directors resign from its Board in April, then being an independent company, moved to 59, City Road, London EC. Mr. Herbert Ridout, who had been acting as Publicity Manager for Odeon, Fonotipia, Sterling and Linguaphone records, resigned to join "Advertising Weekly".

Sterling and Hunting advertised "Owing to many requests from dealers to issue single-sided records we have decided to discontinue the manufacture of Odeon double-sided records and will issue, within a few days, a complete catalogue of single sided records 10 $\frac{3}{4}$ inches in diameter, the pick of the existing catalogue, plus new issues."

The price of the records was three shillings, and this would appear to be the only occasion on which Odeon Records, which had always been double-sided, were sold as single-sided discs. This form of the record would be peculiar to the British catalogue (and of short duration), as Odeon and Fonotipia records were being pressed in England under contract at this time. The large 13 $\frac{3}{4}$ inch Odeon Records had always been single-sided.

J U M B O R E C O R D S

Fonotipia Limited had introduced a new label to the continental market in February, 1908, the Jumbo record, and a new company had been founded in Frankfurt-am-Oder, Germany, to control these records, the Jumbo Record Fabrik G.m.b.H. with offices at Ritterstrasse 47, Berlin. Hans Gloetzner of Odeon Records, was the General Manager.

The Russell Hunting Record Co., Ltd. had put itself into voluntary liquidation in May, 1908, so Sterling & Hunting, Limited was truly bereft of its parent company.

Fonotipia Limited continued to strengthen its financial hold on the International Talking Machine Company m. b. H. of Berlin. On 12th and 13th May, from Herren Joseph Klein of Berlin, Gustav Schaberow of Berlin and Otto Süssapfel of Berlin, they bought more shares in the Odeon manufacturing company, a total of 66 shares with a value of 6,600 marks. In consideration for these purchases, the vendors were allotted 3,320 shares of £1 each in Fonotipia Limited. Completion of sale was dated 15th. June, 1908.

On 26th. May, at an Ordinary General Meeting of Fonotipia Limited in London, it was resolved to increase the nominal capital of the Company to £70,000, and the Registrar of Joint Stock Companies was notified by a document signed by the Chairman, Mr. H. V. Higgins, on 4th. June, 1908.

The last Fonotipia and Odeon Records advertisement from Sterling and Hunting, Ltd. was published in June, 1908, with the Musetta Player Piano Company of Oxford Street, London W. also associated. (At about this time Mr. S. P. Turner, manager at the Hamsell Street studios, left to join the Pathé Company in London.)

Messrs. Barnett Samuel & Sons, Ltd., one of the first factors for Fonotipia records in late 1905, announced in June, 1908, that they were the sole factors and Agents for the new Jumbo Records which were to be put on the market in England with an English and 'continental' repertoire.

The July advertisements for Fonotipia and Odeon Records gave the names of the following as the Agencies from which such records could be supplied to dealers :- Ashton's Royal Agency; Musetta Player Piano Co.; Odeon & Fonotipia Agency of 59, City Road; the Columbia Phonograph Company, General, of Oxford Street, London W.

The association of Columbia with Fonotipia and Odeon records had begun earlier in the United States of America where the Columbia Phonograph Company, General, had become the exclusive manufacturers and Sales Agents for the United States and Canada of the Odeon and Fonotipia Records of Fonotipia Limited. The first of such records had been put on sale in March, 1908.

A FONOTIPIA VOCAL GEM - A COMMENTARY OF JULY 1908

From the 'Phono Trader' magazine:- "The announcement of a double sided record, the latest made by one of the most renowned of operatic tenors robusto, must, perforce, arouse deep and widespread interest among the select though increasing coterie of cultured music lovers and phono' enthusiasts ever on the alert and in quest of the best of good things wherewith to enrich their choice collections. Such an opportunity now offers in this, Signor Bonci's latest contribution to the eclectic few of vocal records of the very highest grade, and which in the repertory of achievements by the famous Fonotipia Company will be acclaimed as yet another triumph in reproduction.

"The two songs are thus entitled, "Zaza" Romanzo di Milo, 62300 and "Vieni Amor Mio", written expressly for Signor Bonci by Leoncavallo, 62301. Both are with piano accompaniment.

"As regards their interpretation, when reviewing a Bonci record of "La Donna e Mobile"(we had needs) "to descant in terms of warmest eulogy upon the Signor's qualification as a singer and as an artiste, the power and splendour of his wonderful organ, his style, either intensely dramatic or thrilling with impassioned fervour of emotional utterance.

"As habitues are now aware, the great tenor is now filling roles in Grand Opera at Covent Garden. to each purchaser of this magnificent record will be presented a copy of "Vieno Amor Mio", full music size, beautifully produced on art paper and with a most artistically designed frontispiece."

Other records received by the Phono Trader for review in July, 1908, were Anselmi on 62268/ 62279, and Bonci on 92014/5 and 92098/9.

A NEW SOLE AGENCY FOR FONOTIPIA AND ODEON RECORDS

In August, 1908, Messrs. Barnett Samuel & Sons, Ltd. took the sole Sales and Recording Agency for Fonotipia and Odeon Records in Great Britain and Australasia from Messrs. Sterling & Hunting, Ltd., thus becoming the fourth such agency, and, with the Jumbo Records which were put on sale in September, Messrs. Barnett Samuel & Sons, Ltd. kept this responsibility until the outbreak of World War I in August, 1914, when the Odeon Records (except for some Baby Odeons) and the Fonotipia Records, ceased to be offered by them to the British public. Only the Jumbo Records continued.

Under the control of Barnett Samuel & Sons, Ltd. the whole of the British catalogues of Odeon Records and Fonotipia Records underwent a re-numbering process.** The old Sterling and Hunting, Ltd. catalogue numbers on Odeon Records, which were peculiar to Britain, were re-numbered in a new series with prefixes 'O' and 'X' according to size, and the Fonotipia discs were given catalogue numbers prefixed 'F' instead of the practice of selling them by one of their single-face numbers as hitherto. Jumbo Records were issued with plain numbers. All these brands were double-sided records.

"Supplement No.1 " to the new Fonotipia catalogue with its 'F' prefixed numbers was issued in September, 1908. I quote, "The Fonotipia No.1 Supplement should prove of special interest to the Trade inasmuch as it contains titles which, for the first time, have been accompanied by a full orchestra.

(Continued on page 807)

Bestellen Sie keine Platte bis Sie dieses Paket



WAS IST DAS?

Das ist ein Paket, enthaltend (gratis), welche heute in Ihren Besitz für Sie wissenswert ist. Sollten Sie ein solches

JUMBO RECORD FABRIK

Nur für Deutschland.

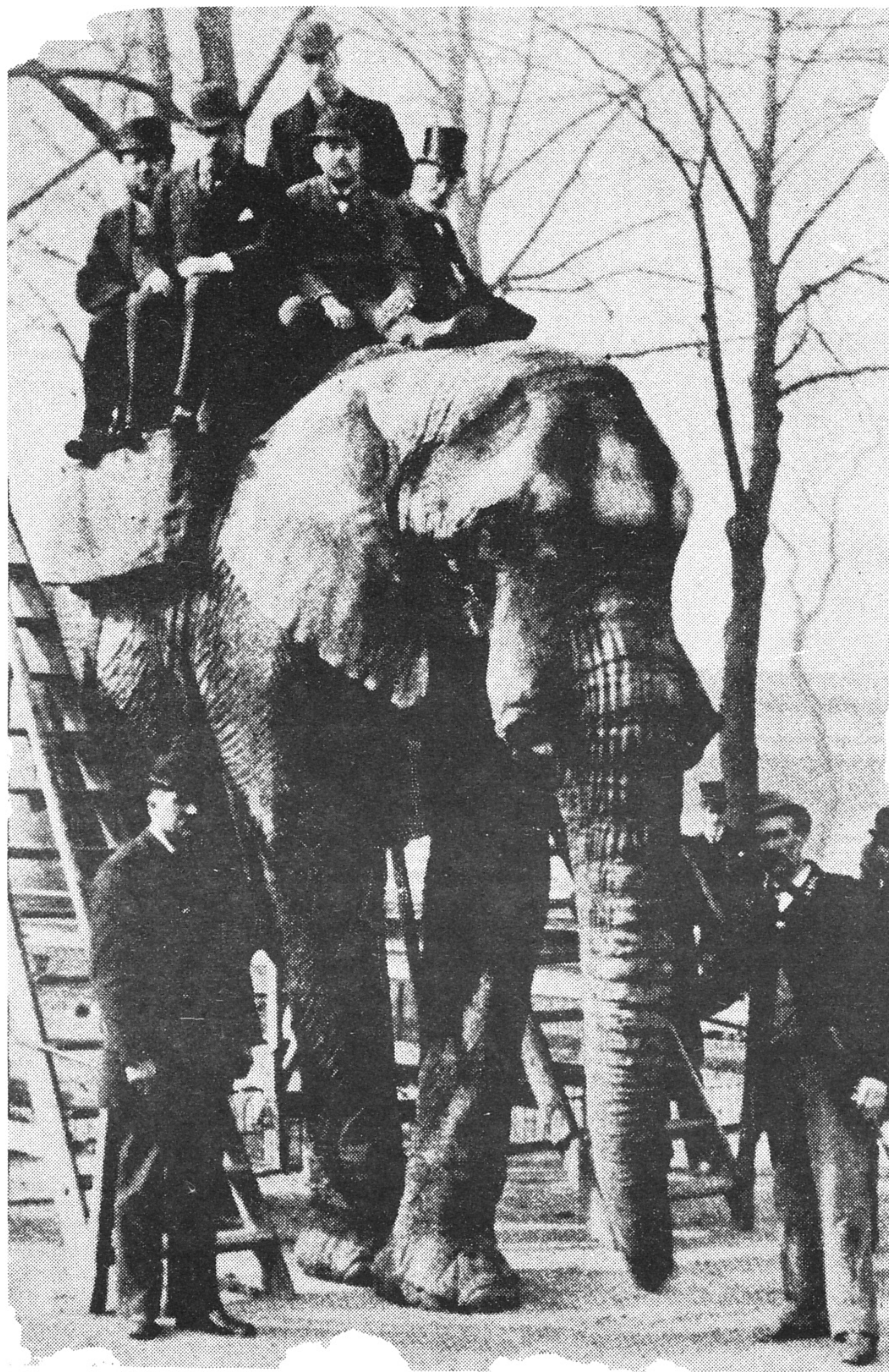
erhalten und den Inhalt geprüft haben. ≡



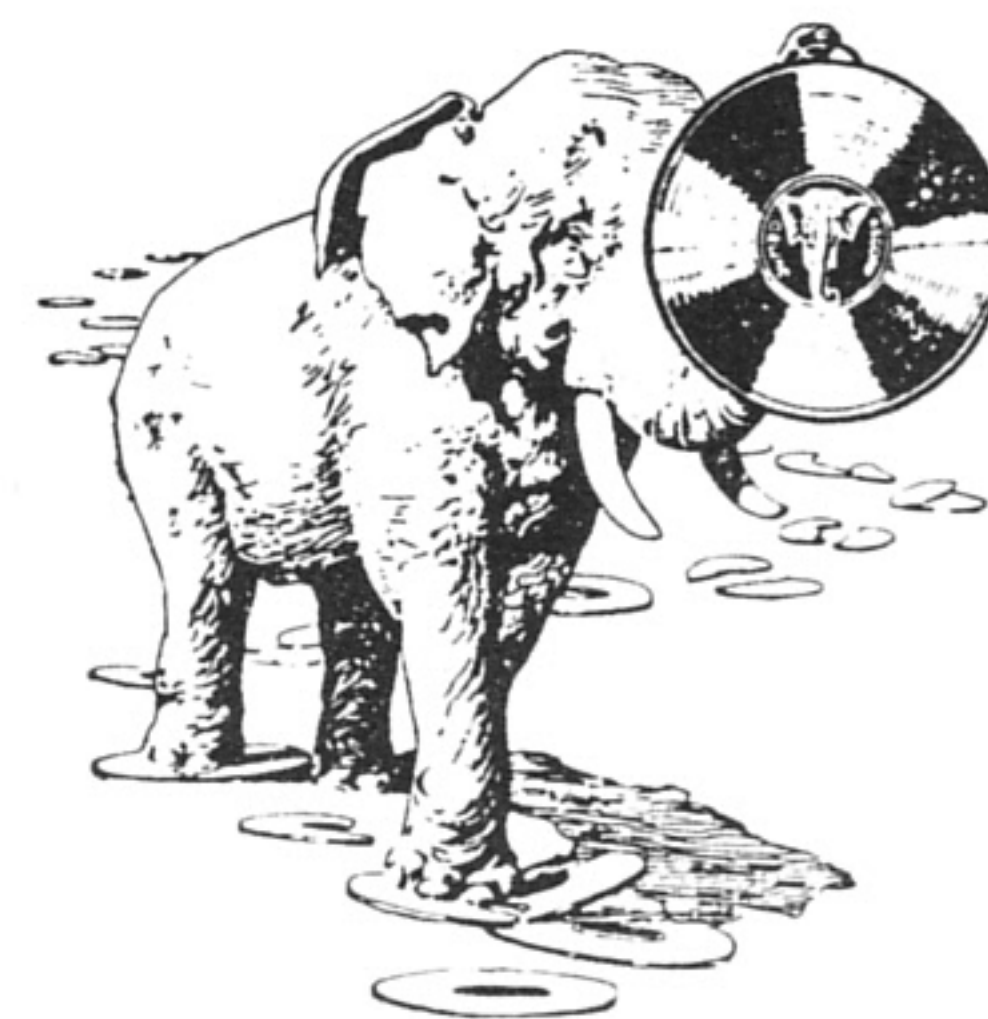
eine 5 Zoll **Probeplatte**
gelangt und Ihnen Alles sagen wird, was

Paket nicht erhalten haben, schreiben Sie sofort an die Fabrikanten:

G.m.b.H., Berlin SW., Ritterstr. 47



1908



JUMBO RECORD

Above: The title-page of a Jumbo catalogue.

Left: This elephant is Jumbo, after whom Fonotipia Limited named its cheaper discs in 1908.

Jumbo was a huge elephant standing 11 feet 4 inches (3.39 m.) & weighing $6\frac{1}{2}$ tons. He had come to the London Zoo in 1865 where he was used to give visitors rides. He attracted great attention in 1882 when it was announced that he had been offered for sale to Barnum & Bailey's Circus being deemed too bad-tempered for the zoo.

Public interest in this matter resulted in a spate of Jumbo songs, broad-sheets, dances and etc., and questions were asked in the Houses of Parliament, so much so, that during his last year in the Royal Zoological Gardens, Jumbo attracted an additional attendance of nearly $\frac{1}{4}$ -million visitors.

The word 'Jumbo' became synonymous with any large or successful enterprise, and as such the word has this attribution in the Oxford Concise Dictionary, and it is no wonder, therefore, that Fonotipia Limited should chose for its records a word indicating success, for it proved to be a highly successful label in Britain, at least, until the outbreak of World War I.

"It has been well-known that the Fonotipia Company have, in the past, attached so much importance to the artistic merit of each disc produced by them whilst they have confined their efforts to issuing records made with pianoforte accompaniments.

"To produce a really perfect orchestral accompaniment has caused the firm a great deal of study, and perfect results have only been obtained after many lengthy experiments. It was only at the end of last year that the artistic director of the Fonotipia Company, the well known Maestro Giordano, at last obtained a well organised reproduction, and it is expected that nearly all future Fonotipia records will appear in the new form. The Fonotipia orchestral accompaniments are really exceptionally fine, and the result thoroughly justifies the pains and care the makers have put in."

The "Fonotipia Company" (Barnett Samuel & Sons, Ltd.) of 32, 34, 36, Worship Street, London EC2, informed that they had issued all the celebrated Bonci records made with orchestral accompaniments, and "A specially good line with this Company is the six titles made by the Milan Municipal Band of 90 performers." Sixteen discs were listed in the month's periodicals, but not under the new 'F' prefixed catalogue numbers.

Commentary in October, 1908, remarked that: "It is interesting to note that many Odeon and Fonotipia artistes are meeting with magnificent reception at Liverpool upon the opening of the Autumn musical season."

"Sammacco, who is exclusive to Fonotipia Records, is the principal attraction at the first concert of the Philharmonic Society, and Bonci, another exclusive artiste to the same company, is to have his pride of place at the second concert of the series."

"At the 'Harrison' concerts in Liverpool, Kubelik (Fonotipia) and McCormack and Dalton Baker (Odeon) were to appear."

In Germany, three subsidiary companies of Fonotipia Limited, the Societa Italiana di Fonotipia, the International Talking Machine Co.m.b.H., and the Jumbo Record Fabrik G.m.b.H., took space in the Phonographische Zeitschrift to draw attention to the "out-of-pitch groove" which was a device designed to combat the unscrupulous piratical duplicating of Fonotipia Ltd. recordings. This "skipped groove" is found on labels other than the Fonotipia group, but these were contracted pressings. (Editor queries= Are some the result of sequestration during World War I and after?).

Mr. H. C. Cooper of Manchester became the agent of Barnett Samuel & Sons for all three brands of Fonotipia Limited in that city. Further commentary in November, 1908, went: "As readers were informed some time back, the Fonotipia vocal records are now being recorded with orchestral accompaniment instead of piano. The high price of these records is more than balanced by the quality.

"For those who are making a collection of good records, the Fonotipias are invaluable, for such artistes as Giuseppe Anselmi, Bonci, Garbin, Kubelik, Parsi-Pettinella, Russ and Zenate Zenatello, also the famous Municipal Band of Milan and the Marine Band.

"As is well known to readers, Kubelik is touring the country and dealers in the towns which he visits would do well to advertise his records, which are easily first in point of selling, Bonci and Zenatello coming second, and Russ following those.

"Notwithstanding the high price of twelve shillings, dealers in well-to-do districts are

Royal Opera Season

TRADE MARK.



Fonotipia.

Covent Garden.



TRADE MARK.



Odeon

ENORMOUS SUCCESS OF

**Bonci, Zenatello,
Sammamarco,**

Who can be heard on

FONOTIPIA RECORDS,

ALSO

**Emmy Destinn, Edna Thornton,
John McCormack, Walter Hyde,**

Who can be heard on

ODEON RECORDS.

Write or call for Lists and particulars to—

STERLING & HUNTING, Ltd.,

59, City Road, London, E.C.

Telegrams:—"DISCODEON," LONDON.

Telephone:—9501 LONDON WALL.

selling them well, the public finding them well worth the money".

In December, readers were reminded of the value of the talking machine record as a chronicler of history, which remarks were inspired by the recent death of Victorien Sardou, the eminent French Author, whose recordings of readings from his own works, which had first been issued in England in 1907, were notified as being still obtainable from the catalogue at ten shillings each.

1909

January, 1909, saw the issuing of a new complete catalogue of Fonotipia Records from Barnett Samuels & Sons, Ltd. the whole being designed in such fashion that made it suitable for a dealer's window display.

A list of twenty-four new titles was advertised in February, which, in March, were fully listed in the trade periodicals under the 'F' catalogue numbers.

An item on Anselmi stated, "Giuseppe Anselmi, who is, perhaps, one of the lesser-known artistes of the Fonotipia repertoire, has been engaged for the Italian Season by the Directors of the Covent Garden Opera House. (Of whom it must be remembered, H.V. Higgins, Chairman of Fonotipia Limited, was one. = F.A.) He has already appeared with great success in Paris, St. Petersburg and Moscow, in fact he is said to be esteemed above any other tenor vocalist in Russian cities. (I once saw a Fonotipia Album with Anselmi's name on the cover, but alas, no discs inside! = F.A.)

In April, Arthur H. Brookes, left for a recording expedition on the European continent but as far as I can gather he cut records only for the Odeon label.

From the news of Odeon Records in May, 1909, it would appear that when the Sterling and Hunting Agency passed to Barnett Samuel & Sons, Ltd. the manufacture of Odeon Records in England was terminated, otherwise there would have been no point in informing the trade that Barnett Samuel & Sons had decided to transfer the venue of manufacture of Odeon records from the 'continent' to England, where Jumbo records were already being pressed. Such a move, it was intimated, would enable Colonial dealers to benefit from the preferential tariffs which were allowed upon British-made goods.

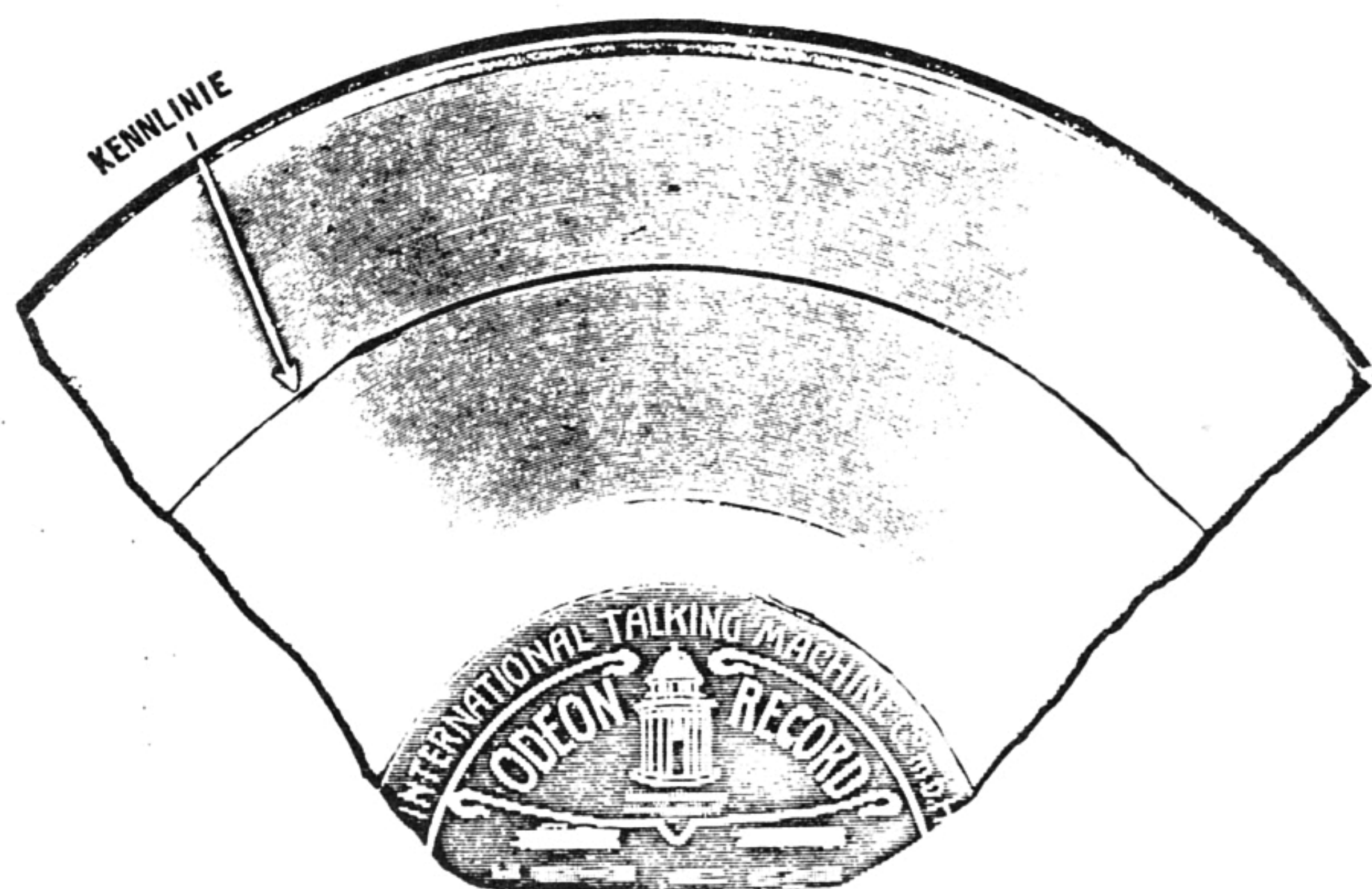
The selling off of double-sided records at much reduced prices and the subsequent decision to sell only single-sided Odeons, in the early Summer of 1908, can reasonably be explained as a method of disposing of the stocks of Odeon discs manufactured under contract for Sterling and Hunting, Limited.

As a selling point, attention was drawn to the coming season of Grand Opera at the Opera House, Covent Garden, where no less than nine Fonotipia and Odeon artistes would be appearing. They were:- Anselmi, Leliva, Grassi, Sammarco and Zenatello of Fonotipia, and Destinn, McCormack, Slezak and Hyde of Odeon Records. The season was to open with the once-banned 'Samson and Delilah' of Saint-Saëns.

Signor Castellano's Italian Opera Company also appeared at the Coronet Theatre, and among the artistes there were, Aide Gonzaga and Elvino Ventura, both Fonotipia artistes.

In May and June, 1909, the International Talking Machine Company, as the Agency for the Fonotipia Records in Germany, advertised a new series of 19 cm. diameter Fonotipia discs, through the pages of the Phonographische Zeitschrift. The records were numbered in

Achtung vor Nachahmungen!!



Die unübertroffene Qualität unserer Fonotipia- und Odeon-Aufnahmen haben wiederholt Veranlassung gegeben, Kopien unserer Aufnahmen herzustellen und in den Handel zu bringen. Um uns gegen diese widerrechtliche Aneignung unseres Eigentums und den uns und unsern Abnehmern dadurch zugefügten Schaden in Zukunft besser zu schützen, versehen wir seit einiger Zeit unsere Aufnahmen mit einer Erkennungs-Spirale. Dieselbe ist inmitten der Schallwellen einer jeden Aufnahme an einer bestimmten Stelle angeordnet und stellt eine Abweichung von der archimedischen Spirale dar, wie sie auf nebenstehender Abbildung gezeigt ist. Oberflächlich betrachtet zeigt jede Schallplatte unserer Aufnahmen inmitten der Schallfurchen einen unbespielten Kreis.

Für die Anwendung dieser Erkennungs-Spirale haben wir Schutzrechte in den verschiedensten Ländern nachgesucht und zum Teil auch bereits erhalten. Diese Erkennungs-Spirale wird ausschliesslich für Fonotipia-Künstler-Platten, Odeon-Schallplatten und Jumbo-Schallplatten angewendet.

Wenn von anderer Seite Schallplatten mit dieser Spirale in den Handel gebracht werden, liegt die Vermutung nahe, dass es sich um Kopien unserer Aufnahmen handelt. Wir ersuchen alle Interessenten der Branche, uns auf das Vorkommen von Schallplatten mit dieser Spirale, welche nicht mit den bekannten Fonotipia-, Odeon- oder Jumbo-Schutzmarken auf den Etiketts versehen sein sollten, aufmerksam zu machen.

Società Italiana di Fonotipia, Mailand.

International Talking Machine Co. m. b. H., Weissensee.

Jumbo Record-Fabrik G.m.b.H., Frankfurt a. O. u. Berlin.

A précis translation of the advertisement opposite:-

BEWARE OF DUPLICATIONS October, 1908.

The unequalled quality of our Fonotipia and Odeon recordings has induced others to make copies and put them into commercial circulation.

To protect ourselves from this illegal appropriation of our property and to safeguard ourselves and our customers from the damage to our interests which would be caused by any future copying of our records, we have lately manufactured our records with a "recognition line". This line has been incorporated within the sound grooves, and takes the form of a deviation from the true Archimedean spiral, as is shown in the accompanying illustration.

With only a superficial look it would appear that there is a 'silent groove' on each of our records, within the recorded area of the disc.

The employment of these "recognition lines" is being applied for as Letters Patent throughout various countries, some of which have already granted such patents. This "Recognition line" is used exclusively on Fonotipia, Odeon and Jumbo Records. Should any other record appear on the market bearing this "recognition line" it should be suspected that it has been copied from one of our recordings,

We ask all interested parties in the trade to advise of the appearance of any records with this "recognition line" which do not bear the well-known trade marks on their labels of Ode , Fonotipia or Jumbo Records.

* * * * ~ ~ ~ * * * *

continuation of the main Fonotipia story:-

a 9,500 series, and all were recorded by the Band of the Italian Royal Marines, and were priced at 3.25 marks.

Although I have no evidence that they were sold in any other country, I presume that they were on sale in Italy. The Odeon records of the same small size seem never to have been sold by Barnett Samuel & Sons, Ltd.

Reports in July, 1910, said that the Carl Lindström concern had been newly registered as the Carl Lindström A. G. of Berlin, with a nominal capital of 750,000 Marks (=£62,500), being described as manufacturers of talking machines, phonographs and cinematographs. This Company had already been using the style "Parlophon" for models of disc and cylinder record machines in Germany. Service acceptance in London for this company was at 77. City Road, EC, with a Mr. Otto Ruhl, a naturalised German.

BARON F. A. d'ERLANGER - OPERATIC COMPOSER

On 14th. July, 1909, the opera "Tess of the d'Urburvilles" was performed at the Royal Opera House, Covent Garden. It had had its first performance at the San Carlo, Naples on 10th. April, 1906, and was given performances at the Dal Verme, Milan, in November, 1908. With the plot taken from Thomas Hardy's novel of the same name, the music was composed by Baron F. A. d'Erlanger, a leading stockholder of Fonotipia Limited. The cast included Destinn, Sammarco, Zenatello and Monsieur Gillibert.

The Baron took at least a dozen curtain calls at the end of the evening from an audience which was described as "one of the most brilliant and crowded of the season, displaying an enthusiasm seldom seen at England's Home of Grand Opera".

Just prior to this occasion, Fonotipia Limited had issued a share statement revealing that of the 70,000 shares on offer to the public, 58,800 had been taken up. Of these 34,604 had been allotted as fully paid up and the other 24,196 had been subscribed for.

In August, 1909, came a promise of a new supplement of Fonotipia records. The feeling was expressed that in view of the great success of Fonotipia artistes at Covent Garden during the season of opera there, the sale of Fonotipia records would be greatly advanced.

The 'Phono Trader' received pre-release copies of the new discs and declared that they "Surpassed anything this country has produced before, leaving nothing to be desired from the artistic and vocal point of view". The Royal Italian Marines Band, and items by Zenatello, Bonci and Grassi were included in the latest supplement.

FONOTIPIA RECORDS "DUBBED"

In September came disturbing news of happenings in America. It was reported that Odeon and Fonotipia records were being duplicated ("dubbed") and sold in America by a man named Bradley, who had been advertising himself as the Sales Agent for "The Continental Record Co."

Mr. Philip Mauro, Counsel for the American Graphophone Company, manufacturers of Columbia records, was given instructions to bring an action against Bradley in the names of the Columbia Phonograph Company, General, and of Fonotipia Limited, England. The matter was also brought to the notice of the Victor Talking Machine Company as Bradley had also been "dubbing" Victor 'Red Seal' Records.

It was said that Bradley's "Continental Records" plainly indicated on their faces that they were "duplicates", but that manufacture could not be halted as no remedy existed in law or equity in the United States of America!

Described as a "pioneer decision", District Judge Chatfield prohibited such a procedure under the "Unfair Trading" laws. Dubbing was declared illegal as a practice of making records. The case against Bradley with regard to the duplication of the Victor Records was heard at the same time. ***

The August Fonotipias, when listed in September, showed catalogue numbers F1103 to F1120

ANOTHER VOCAL GEM

In October, 1909, Fonotipia record F.1057, containing the famous duet from *Il Trovatore* the Miserere, sung by Signor Longobardi, tenor, and Signora Talexis, soprano, accompanied by full orchestra and the Chorus of La Scala, Milan, was offered at a reduced price of eight shillings.

"This is a disc", said Barnett Samuel & Sons' advertisement, "that is typical of all other Fonotipia Records, and one that has helped to make the Fonotipia name famous. The perfect beauty of the orchestral accompaniment, the liquid flow of the singers' voices, the faultless harmonising of the chorus, the solemn tolling of the bell - all go to make up a record before which criticism is silent. To those who have not previously heard Fonotipias, it is a revelation and an education".

** Our compilation of a British Odeon listing is progressing, and will show records issued by all agents.

***The Red Label records of G & T Ltd. were dubbed at one period by a Russian firm.

8.Jan.13,10"	2084 S1, S2, S3	Rescue the perishing Issued on 80115	Harry Anthony, Charles W. Harrison & mixed voices
8.Jan.13,10"	2085 S1, S2, S3	Draw me nearer Issued on 80112	Harry Anthony, Charles W. Harrison & mixed voices
9.Jan.13,10"	2086 S1, S2, S3	Lucia - Thou hast spread.... Rejected by Edison	Reed Miller
9.Jan.13,10"	2087 S1, S2, S3	In the evening by the moonlight dear Louise Finally rejected	Harvey Hindermeyer & Chor Charles W. Harrison
10.Jan.13,10"	2088 S1, S2	Favorita- Angel of light Rejected	
10.Jan.13,10"	2089 S1, S2,S3	Trovatore - Miserere Finally rejected	Agnes Kimball & Harry Anthony
13.Jan.13,10"	2090 S1, S2,S3	Semiramide - Overture Issued on 50059, then finally rejected	Brass Orchestra
13.Jan.13,10"	2091 S1, S2,S3	Lurline - Overture Finally Rejected	Brass Orchestra
14.Jan.13,10"	2092 S1, S2,S3	Mandy Lee Hold, then finally rejected	Walter van Brunt & Chorus
14.Jan.13,10"	2093 S1, S2,S3	O Promise Me Issued on 50104. Dubbed on to Blue Amberol 2524	Anton Weiss
15.Jan.13,10"	2094 S1	Marta - M'appari Passed. See Serial no.2275. Test B on-Ed 125	Alessandro Bonci
15.Jan.13,10"	2095 S1	Tosca - E lucevan le stelle Passed. See Serial no.2276. Test B on Ed 126	Alessandro Bonci
16.Jan.13,10"	2096 S1, S2	Ave Maria (Schubert)	K. H. Staats
16.Jan.13,10"	2097 S1, S2,S3	The Broken Melody Issued on 50097. Test C on Ed 127	Leo Taussig
17.Jan.13,10"	2098 S1, S2	Serenade (Sing, smile, slumber)(Gounod) Accepted. Issued on 83023	Alessandro Bonci
25.Jan.13,10"	2099 S1, S2,S3	A dream	O. H. Cooke
20.Jan.13,10"	2100 S1, S2,S3	Tales of Hoffmann - Barcarolle Rejected	Elizabeth Spencer & Frank Croxtan
20.Jan.13,10"	2101 S1	Air - Printenicke Rejected	Alessandro Bonci
20.Jan.13,10"	2102 S1,S2	Aida - Celeste Aida Issued on 83003	Alessandro Bonci
21.Jan.13,10"	2103 S1,S2,S3	There is no love like mine Issued on 50094	Marie Kaiser & Royal Fish
23.Jan.13,10"	2104 S1,S2,S3	Scarecrow dance Issued on 50080	Brass & string orchestra
	2105	Noise experiment record	
24.Jan.13,10"	2106 VOICE	TRIAL - Because I love you	Belle d'Altamonde
24.Jan.13,10"	2107 S1,S2	Don Pasquale.- So anch'io la virtu magica Issued on 83003	Lucrezia Bori
24.Jan.13,10"	2108 S1,S2	Faust - Aria de gioelli Accepted-then finally rejected=blasts	Lucrezia Bori
27.Jan.13,10"	2109 S1,S2,S3	Love's last word Hold	String Orchestra

814

27.Jan.13,10"	2110	S1, S2,S3	Fra Diavolo - On yonder rock reclining. Royal Fish & Marie Issued on 80121	Kaiser
28.Jan.13,10"	2111	S1,S2,S3	Elixir of Love - Dawn, a soft cheek, a pearl, a tear Rejected	Charles W. Harrison
28.Jan.13,10"	2112	S1,S2	Martha - Good night rejected-Edison	Mixed voices
29.Jan.13,10"	2113	S1,S2,S3	Spring of love Issued on 50132. Dubbed on to Blue Amberol 2473	Instrumental Quartette
29.Jan.13,10"	2114	S1,S2,S3	Last Rose of Summer Issued on 50116	Instrumental Quartette
30.Jan.13,10"	2115	S1,S2,S3	When the robins nest again Issued on 80100 (Re-made	Charlotte Kirwin & chorus F,G,H)
30.Jan.13,10"	2116	S1,S2,S3	Carmena - vocal waltz Issued on 80275	Mixed Quartette
30.Jan.13,10"	2117	S1	VOICE TRIAL	G. H. Downing
30.Jan.13,10"	2118	S1	VOICE TRIAL	G. H. Downing
31.Jan.13,10"	2119	S1,S2,S3	Bonnie Doon Issued on 80117	Christine Miller & Chorus
31.Jan.13,10"	2120	S1,S2,S3	Prophet - Ah my son Issued on 80103	Christine Miller
	2121		TRIAL - A dream	Ruth Graham
3.Feb.13,10"	2122	S1,S2,S3	In old Madrid Issued on 80099	Reed Miller & Chorus
4.Feb.13,10"	2123	S1,S2,S3	Bohemian Girl (Balfe) - Overture (a remake of 2023) Issued on 50131	Brass & String Orch.
4.Feb.13,10"	2124	S1,S2,S3	Crown of Diamonds - Overture	Brass & String Orch.
5.Feb.13,10"	2125	S1,S2	Mignon - Connais tu le pays?	Eleanora de Cisneros
5.Feb.13,10"	2126	S1,S2	Huguenots - Nobil signor salute Issued on 82522. Test B on Ed 17	Eleanora de Cisneros
6.Feb.13,10"	2127	S1,S2	Gioconda - Voce di donna Issued on 82524. Test B on Ed 129	Eleanora de Cisneros
6.Feb.13,10"	2128	S1,S2	Trovatore - Stride la vampa Issued on 82523. Test A on Ed 130	Eleanora de Cisneros
7.Feb.13,10"	2129	S1,S2	Her bright smile haunts me still Issued on 80122	Harry Anthony & Chorus
7.Feb.13,10"	2130	S1,S2,S3	Sweetest story ever told Rejected	Benjamin E. Berry & Chorus
10.Feb.13,10"	2131	S1,S2	The Rosary Blasts	Eleanora de Cisneros
10.Feb.13,10"	2132	S1,S2	Kathleen Mavourneen Rejected	Eleanora de Cisneros
10.Feb.13,10"	2133	S1,S2	Faust - Faites lui mes aveux Issued on 82519	Eleanora de Cisneros
	2134		VOICE TRIAL - Ave Maria	Miss Hebst
11.Feb.13,10"	2135	S1,S2	You're just too sweet to live Issued on 50082	Collins & Harlan
13.Feb.13,10"	2136	S1,S2,S3	Les Sirens - waltz Issued on 50075	Brass Orchestra

13.Feb.13,10"	2137 S1,S2,S3	Forget me not waltz Rejected	Brass Orchestra
14.Feb.13,10"	2138 S1,S2,S3	Just like a little word called welcome Rejected	Royal Fish & Chorus
14.Feb.13,10"	2139 S1,S2,s3	My Bambazo Issued on 50100	Collins and Harlan
15.Feb.13,10"	2140 S1,S2,S3	Jolly fellows waltz Issued on 50091	Brass & String Orchestra
17.Feb.13,10"	2141 S1,S2,S3	Believe me if all those endearing young charms Rejected	Royal Fish & Chorus
17.Feb.13,10"	2142 S1,S2,S3	Nina Issued on 50125	Leo Taussig
18.Feb.13,10"	2143 S1,S2,S3	Gold and Silver waltz Issued on 50074	Brass Orchestra
18.Feb.13,10"	2144 S1,S2,S3	Dancing in the barn - Schottische Issued on 50077 and Blue Amberol 4032	Brass Orchestra
19.Feb.13,10"	2145 S1,S2,S3	Pagliacci - selection Issued on 50131	Brass Orchestra
19.Feb.13,10"	2146 S1,S2,S3	Bronze Horse - overture Rejected by Edison	Brass and string orchestra
20.Feb.13,10"	2147 S1,S2,S3	Love's own sweet song Rejected	Mixed Quartette
21.Feb.13,	2148	VOICE TRIAL - Home Sweet Home	Ellen Beach Yaw
20.Feb.13,10"	2149 S1,S2,S3	Won't you write a letter papa? Issued on 80118	Walter van Brunt & Chorus
21.Feb.13,10"	2150 S1,S2,S3	Trovatore - At my mercy Rejected	Elizabeth Spencer and Harry Anthony
21.Feb.13,10"	2151 S1,S2,S3	The old rustic bridge by the mill Rejected	Marie Kaiser
24.Feb.13,10"	2152 S1,S2,S3	Hungarian Serenade Issued on 50090	American Symphony Orchestra
24.Feb.13,10"	2153 S1,S2	Carnival of Venice - Variations Issued on 50099	Brass and String Orchestra
	2154	VOICE TRIAL - Bird on the wing	Nina Clarke Hooker
	2155	VOICE TRIAL - Beauty's eyes	Nina Clarke Hooker
25.Feb.13,10"	2156 S1,S2,S3	Dearie Rejected by Edison	Royal Fish & Chorus
26.Feb.13,10"	2157 S1,S2,S3	Bake dat chicken pie Issued on 50082	Collins and Harlan
28.Feb.13,10"	2158 S1,S2,S3	Second Valse Brillante Issued on 50091	Brass Orchestra
28.Feb.13,10"	2159 S1,S2,S3	My Cavalier - waltz Hold. Then rejected	Brass Orchestra
1.Mar.13,10"	2160 S1,S2,S3	Dinah Dear Hold. The rejected	Collins and Harlan
1.Mar.13,10"	2161 S1,S2,S3	Baton de Road Issued on 50110	Brass and String Orchestra
3.Mar.13,10"	2162 S1,S2,S3	Any Rags? Issued on 50100	Athur Collins

JOHN BULL -- Research

816

From Beka
single

Details as on label

Details in
shellac

side no. Artiste title

40214 Harry Trevor Jolly good luck to the girl who loves a soldier. British Manufacture Throughout
40218 " In the twi-twi-twilight "

Baritone (Editors note: This is not a pseudonym for George Lashwood)

40269 Will Terry Oh, the steamer! Oh, the sea! Pressed Abroad
40270 " comic We all came into the world with nothing "

40275 Jessie Broughton Genevieve (Stephen Adams)

40279 " Song of Seville from "Carmen" (Bizet)

contralto

40315 Will Terry Come and have a drink with me
40336 " Come along up in the Flip-Flap

40351 Alan Turner The Bellringer (with bells)(Wallace)

40352 " Beauty's Eyes (Tosti)

Baritone

40324 John Bull London Orchestra Les Cloches de Cornville(Planquette) Pressed Abroad

40389 " Grand March from "La Reine de Saba" (Gounod) "

40426 Kenneth McKenzie She is ma Daisy (Harry Lauder)

40427 " I love a lassie (Harry Lauder)

(Editors note: This is not a pseudonym for Harry Lauder. Another copy has been seen with the labels printed in different typeface and saying- British Manufacture throughout)

40441 Harry Kenrick Call around any old time

40451 " Hang out the front-door key

comic (Editors note: This is not a pseudonym for George Lashwood)

40613 Bert Alvey Wigger Wagger

comedian

40507 Harry Kenrick I want to go to Idaho

comic (Editors note: This is not a pseudonym for G.H.Elliott)

40539 Harry Kenrick Come be my Rainbow

British Manufacture Throughout

40539

Made in England

40541 " My girl is a Yorkshire Girl

Comedian

"

40541

Made in England

From Beka, continued

40454	John Bull Orchestra.	Pantomime Memories, Selection 1, (Editors note: Of the tunes included are-Jolly good luck to the girl who loves a soldier; In the twi-twi-twilight; Love me and the world is mine; plus other unknown to me)	British Manufacture Throughout	40454	B
40455	"	Pantomime Memories, Selection 2, (Editor recognises: Sue, Sue, Sue; Oh, oh, Antonio; Put me among the girls)	British Manufacture Throughout	40455	B
40460	Philip Ritte	Thora (Stephen Adams)	Pressed Abroad	40460	A
40462	"	Come into the garden, Maud (Balfe)	"	40462	A
	Tenor				
40596	John Bull Orchestra	Selection 1 from "Our Miss Gibbs"	British Manufacture Throughout	40596	<u>M</u>
40597	"	Selection 2 from "Our Miss Gibbs"	"	40597	<u>M</u>
40614	Bert Alvey	Yip-I-Addy-I-Ay (from Our Miss Gibbs)	"	40614	<u>M</u>
40615	"	I'd like to spend my holidays with you	"	40615	<u>M</u>
	Comedian				
40627	John Bull Orchestra	Songe d'Automne (H. Joyce)	"	40627	<u>M</u>
40628	"	Vision of Salome	"	40628	<u>M</u>
40635	Alf Thomas	The Post Man (H. Devine)	Pressed Abroad	40635	<u>M</u>
40636	"	Jenny Morgan (Dave Hall)	"		<u>M</u>
	(Comic)	(These are mostly spoken comic patter. The gentleman has a strong South-Wales accent)			
40640	John Bull London Orchestra	Overture from "Poet and Peasant" Part I (Suppé)	Pressed Abroad	40640	<u>M</u>
40641	"	Overture from "Poet and Peasant" Part II (Suppé)	"		<u>M</u>
40648	Bert Alvey	The girl in the clogs and shawl	Pressed Abroad	40648	<u>M</u>
40675	"	Let's all walk down the Strand	"		<u>M</u>
	comic				
40717	John Bull Orchestra	Pantomime Hits. Selection 1.	British Manufacture Throughout		C
		(Editor recognises: Has anyone here seen Kelly?; Every little bit.....; Sweet Adeline; Yip-I-Addy)	Made in England		
40718	"	Pantomime Hits. Selection 2.	British Manufacture Throughout		D
		(Editor recognises: Redwing; Now I have to call him father; I've been out with Charlie Brown; I must go home tonight)	Made in England		
40737	Harry Kenrick	I've been out with Charlie Brown (Lashwood)	Pressed Abroad		# ^b
40740	"	Come in the Parlour Charley (Florrie Forde)	"		# ^b
		(Editors note: neither of these is a pseudonym for the other artistes named)			

A major turning point in the history of the gramophone was the recording in 1913 of the complete Beethoven Fifth Symphony. The orchestra was the Berlin Philharmonic: the conductor the legendary Hungarian Arthur Nikisch (1855 - 1922). The 12 inch records - eight in all - were released in Britain during the summer months of 1914, so that paradoxically the complete set was made available just as World War I was breaking out. After the war the recordings were re-issued in double-sided form (D89/92) and stayed - albeit in the Historical Section - until the end of World War II.

Electrola, the German subsidiary of EMI, has transferred the recording to LP (C.053-01 466) and this disc is available in Britain to special order via EMI Imports, Ltd. The technical limitations of the 1913 recording are obvious but its historical significance helps one to overlook these. Above all one hears Nikisch's conducting, his superb musicianship transcending the limitations of the early acoustic recording.

Nikisch, the "master of the baton" really was a legend. Incidentally in those distant days when Leipzig was the musical centre of a highly musical Germany he numbered among his students an obviously promising young Englishman named Adrian Boult.

Side 2 contains three works recorded with the L.S.O. as the war clouds gathered in June and July, 1914: the Marriage of Figaro Overture, the Oberon Overture and Liszt's Hungarian Rhapsody No.1. These two survived in the D series a long while in the Historical Section of the HMV catalogue.

Bi-lingual (English & German) sleeve notes are excellent in content: in places the translation slips badly.

Schnabel was the master of Beethoven. In the thirties it was he who recorded all 32 of Beethoven's sonatas to form the first twelve volumes of the HMV Beethoven Society: a massive undertaking. Born in Austria, he established a pre-eminent reputation in Europe and the U.S.A., in which country he spent the war years, subsequently to die in Switzerland in 1951 aged 69. Today little of his work is in the British catalogue but Angel-Seraphim (U.S.) has transferred his Society recordings to LP and these are available here to special order via EMI Imports, Limited.

RCA has now issued (SMA 7013, £1.49) a new LP on which he plays Beethoven Sonatas No. 30 and 32. Dating back to 1942, these are the only recordings he made in the U. S. They were not issued at the same time, presumably because in the U. S. wartime shortages had led to the catalogues being trimmed to "Music America Loves Best" and in Britain because their issue would have conflicted with the rigid strictures of the Beethoven Society.

The recording is good and mercifully without

synthesised stereo. The sonatas are not well known but like so much of Beethoven's music can be enjoyed on whatever plane one chooses to listen to them. The playing is precise, authoritative: would one have expected it to be otherwise? But the sleeve notes worry me. Irving Kolodin is a distinguished music critic and his musical views are to be respected. However, it means little to me to be told that in 1937, Schnabel's "Hammerklavier" sonata was available to "whoever would pay \$6.50 for the twelve sides" (roughly five shillings a record then): and his comments on the operation of the "Society" system suggest something radically different from what I recall of the British practice.

Leonard Bernstein's international renown as a conductor, as a composer (who can forget the scintillating music of "West Side Story"?) and as an academic musician has never been higher. To celebrate his recent visit to Britain - part of the bi-centennial celebrations - RCA issued several Bernstein LP's in the SMA series (£1.49 each). On SMA 7016 is Gershwin's "An American in Paris", transferred from C3881/2 and coupled with Copland's Ballet Suite "Billy the Kid". I found that interest in hearing the Bernstein was offset by a rather fuzzy sound quality. If you want a piece of veteran Bernstein I recommend the SMA 7014, Stravinsky's "Soldier's Tale" (transferred I believe from an early LP) which I find outstanding musically and technically. The Octet for Wind Instruments is its coupling. For those who have not yet come to know Stravinsky's music this record provides both an agreeable and inexpensive opportunity to start.

Incidentally with RCA it pays to watch for special offers. Records finally listed at £2.99 often start life at £1.49. In London they can be bought at some shops for not much more than £1. Once the offer expires they revert to their higher price. Levine's recordings with the Chicago Symphony Orchestra of the Mahler 4th and Brahms 1st Symphonies were cases in point. Even at its (current) price the Levine recording may well be considered a best buy. Until 30th. November you can get a glowing performance of Elgar's 1st. Symphony by Gibson and the Scottish National Orchestra for the same low price on RCA's ARL1 5130.

There will be few collectors of 78's without at least a few records of music recorded under the baton of Stokowski. From the introduction of the electrical process in 1925 this London-born genius built up an extensive and authoritative repertoire.

Now in his nineties he has recorded the Mahler 2nd. Symphony, (RCA ARL2 0852 stereo @ £5.98) with the London Symphony Orchestra and Chorus with Brigitte Fassbaender and Margaret Price as soloists. It is a sound performance, well recorded, but I personally would not choose it of the several available (Solti on Decca is greatly favoured: I also like Bernstein on CBS). This new Album shows the remarkable stamina of this great man, for this is a massive work, demanding of all concerned. I wish I could

recommend it more firmly but I feel that I can do so only to those who want Stowkowski rather than Mahler: not

because it is bad but because there are better recordings available in the same price range.

(2)

E. Bayly

A Seat in the Dress Circle.....

with World Records.....

At present 'World Records' are re-promoting all of their re-issues from the great London Shows, plus a few extra items. So just go through our past issues & if there were any that you did not obtain when reviewed, you have a fresh chance now. They all represent excellent value, for being drawn from all labels available to EMI they give a comprehensive coverage.

Having had records from shows with big casts, it was a pleasant surprise to receive souvenirs of some GREAT shows performed by a small company.....

* The Co - Optimists (SHB 25)

who were concert party in the theatres of the West End of London instead of by the seaside where one might expect to see them.

Their programme was a mixture of topical and sentimental songs intermixed with sketches topical, serious, humorous, plus comedy dispensed by such as Davy Burnaby. Their first show opened at the Royalty Theatre in June, 1921, during the heatwave, and after an uncertain first week, success was sealed . . so much so that with many new shows The Co-Optimists flourished until 1931.

Although each performer was as important as the other, Melville Gideon was the chief singer of songs at the piano and composer of most of the songs performed in the shows. 18 of the items in this two-record set are by him. Some are 'straight' songs, while others tend towards crooning.... but not in the style later familiarised by Mr. Crosby or the dance band singers. All very pleasant. Two 'surprise' items are two songs by the light baritone Stanley Holloway "Tommy the Whistler" and "The Wheel Tapper". He joins Gilbert Childs for a comedy version of "Alouette", and Childs sings others solo (comic) especially "The Rich Man Rides By" by the veteran music hall song writers Weston & Lee. Of course there are duets featuring Phyllis Monkman & Laddie Cliff, Elsa Macfarlane & Stanley Holloway; and one in which an aspiring lover boasts his wealth "You've such a lot" composed by one Astaire (!) sung by Austin Melford and Miss Monkman. Irving Berlin is represented by "Always" & "You forgot to remember".

Twelve of the thirty-two tracks are electrical recordings, all being Gramophone Co. originals. Those from 1924 demonstrate the excellent quality obtained just prior to the introduction of microphones.

Some of these recordings are exceedingly rare in their original form. Collectors assembling examples of London shows will prize these re-issues not only for their actual context but as representing an important aspect of our entertainment.... the concert parties which were otherwise infrequently recorded, a loss rectified by the Co-Optimists.

* Jerome Kern in London, 1914 - 1923. (SHB34)

Here is a chance to hear the songs from the pen of young Jerome Kern performed by the original London caste artistes, representing a wealth of talent appearing in 'The Passing Show', 'Tonight's the Night', 'Theodore & Co', 'Vanity Fair', 'Oh Joy', 'Sally', 'The Cabaret Girl' and 'The Beauty Prize'. The majority were originally Columbia recordings.

The first nine tracks are from the Gramophone Company beginning with the jolly duet 'You're here and I'm here' featuring Elsie Janis and the ill-fated Basil Hallam. Other duets bring us Kern songs still remembered well today, perhaps because of their optimism - 'They didn't believe me' (George Grossmith & Haidee de Rance), 'Till the clouds roll by' (Beatrice Lillie & Tom Powers), 'Look for the Silver Lining' (Dorothy Dickson & Gregory Stroud).

Light hearted numbers are provided by Beatrice Lillie, Tom Powers, Billy Leonard, Dot Temple, Leslie Henson and Tom Payne in various combinations or solo, while the Duncan Sisters sing the comedy "Bull Frog Patrol" which had been in a Broadway production but dropped in London, although they performed in London cabarets and recorded it.

The Winter Garden Theatre Orchestra plays the ballet music from 'Sally' and a selection from 'The Cabaret Girl' and the London Theatre Orchestra a selection from 'The Beauty Prize'.

Heather Thatcher, beginning her career in musicals is heard in two duets 'Lorelei' and 'The Church Round the Corner' with Seymour Beard and Grossmith respectively.

For many of the productions, Jerome Kern's lyrical collaborators were P. G. Wodehouse, Clifford Grey and/or George Grossmith. Again, none of the original 78rpm recordings is easy to find now, quite a number being 12-inch, all except one having been recorded by October, 1922, so some tracks were re-recorded from less-than-mint originals, but thanks to John Wadley's continued efforts, all are tolerable listening, most being surprisingly fine.

Unless you have deliberately set out in the past to collect records of Jerome Kern's music most of this two-record set will be new to you and a pleasant surprise.

* Noël Coward - The Great Shows (SH179/80)

The art of Noël Coward was multi-faceted for he wrote 'straight plays' as well as musical shows and appearing as a single-act in cabaret. This set brings us examples of five of his shows and as some of the recordings are solos by Coward we obtain a tiny glimpse of his cabaret-self, but only a glimpse as one will know after hearing recordings of his cabaret turns using specially prepared material.

The American Peggy Wood was leading lady to George

Metaxa in the 1929 'Bitter Sweet' with Ivy St. Hilier supporting. It is very refreshing to hear Metaxa's light tenor voice if one is accustomed only to the Nelson Eddy Jeannette McDonald film version (of which the '78's are more commonly found). Metaxa's approach is more lyrical and Peggy Wood's voice is strong to carry the part.

Although leaning towards the Viennese idiom in earlier shows, Coward's dialogue and lyrics were always more sophisticated and crisp, especially in the songs, becoming more apparent in those which he sang himself for his voice inflects the appropriate tone or insinuation.

The actual artistes of 'Cavalcade' (which in its telling of the story of a family through several generations incorporated older songs by other composers) recorded nothing from it. Sir Noël recorded his own two compositions 'Lover of my dreams' and 'Twentieth Century Blues'.

With 'Conversation Piece' of 1934, Coward returned to a more conventional musical show set in 1811 written for Yvonne Printemps who played the leading role. The big number 'I'll follow my secret heart' was a duet for Miss Printemps and Sir Noël whom we hear. Comedy numbers are provided by four men-about-town 'Regency Rakes' and Heather Thatcher & Moya Nugent who tell us 'There's always something fishy about the French'.

From 'Operette' we hear 'Countess Mitzi' and 'Operette' sung by the vivacious Fritzi Massary brought out of retirement to play a part admirably suited for her. Peggy Wood sang 'Dearest Love' and Coward recorded 'Gipsy Melody' which was used only for the trial in Manchester. Undoubtedly the best-remembered tune is 'The Stately Homes of England' sung by a group of young gentlemen.

The final show featured in this set is 'Ace of Clubs' from 1950, which is 'modern' being set in a Soho nightclub, starring Pat Kirkwood and Graham Payn.

From a plot of spivs and gangsters emerged a music musical score of attractive tunes. The caste-recordings were made as medleys by Miss Kirkwood, Mr. Payn and Sylvia Cecil. These include 'Chase me Charlie' (about cats), 'My Kind of Man' and 'In a boat on a lake'. Sir Noël recorded some of the songs himself including the witty 'I like America' and 'Josephine'. As expected, there was a song for a group of males; this time the funny trio 'Juvenile Delinquents'.

This is an excellent array of Noël Coward to add to your collection.

*

Another strong point of the Retrospect Series of World Records is a reissue programme featuring British Dance Bands through whose repertoire they are steadily working, several of which we have already reviewed here...

*The Carroll Gibbons Story (SH 167/8)

An important figure in the dance band scene was the softly-spoken, Carroll Gibbons, who presided at the Savoy Hotel almost continually from 1924 until 1954, though the last tune recorded in this two-record, thirty-two-track set dates from November, 1924. During that time many famous

dance band musicians played at the Savoy, as well as some like Eugene Pini, Hugo Rignold and Eric Siday, who became well-known violinists in the world of serious music, while George Melachrino went on to lead his own orchestra. Paul Fenhoulet became a famous first-class arranger of dance band music.

The arrangements only infrequently featured Carroll Gibbons as solo pianist for he was mostly just the piano-player in the band. 'I guess I'll have to change my plan' and 'Midnight in Mayfair' are solos showing his competence, with light touch to be very entertaining throughout a whole tune, and in 'Shuffle off to Buffalo' we hear some very quick fingering. 'Judy' features a duet with Ian Stewart as does 'The Piccolino' which became a much-played hit for Irving Berlin (from the Astaire-Rogers film).

'Easy come, easy go' is an interesting arrangement by the Fenhoulets. It was written by Johnny Green who indulges in two comedy patter tracks with Carroll Gibbons. 'I don't want to walk without you' is an apt vehicle for Carroll Gibbons' own gentle, drawling, vocal refrain, typical of his speaking voice and manner.

Unfortunately the sleeve notes do not tell us the names of the arrangers.... perhaps such details do not survive..... but this set affords a variety of 'orchestral voice and timbre'. Even two tunes by the same writers, Gordon & Revel, 'Goodnight my love' and 'There's a lull in my life' both with vocal refrain by charming Anne Lenner, are treated differently: the first being quite relaxed with lead by muted trumpet, the second having a riffed motif in the background to denote despair one assumes. We make no claim that each tune was analysed and arranged to fit the theme! There is variety, but overall the tone is quiet and relaxed. From 1939 onwards the arrangements become more stylised and similar to each other in 'voice and tone'. Perhaps the onset of war and its problems was the cause.... a fate which Carroll Gibbons did not suffer alone.

This set provides an excellent musical biography of one who provided polished dance music in one of London's chief hotels. It was rarely 'hot' yet within variety of arrangements still provided good rhythm for dancing.

* Maurice Winnick & His Orchestra (SH225)

Having studied music at Manchester College of Music, Maurice Winnick's first appointments were in cinema orchestras, where he turned his attention to dance music, becoming in turn the leader of bands in Manchester, Nottingham and then the Hammersmith Palais de Danse.

From there he moved into the world of the elite hotel and restaurant where he found that "sweet" music with a quieter beat would bring him success. He modelled his band on that of Guy Lombardo with the saxophone predominating sweetly.

Side one dates from 1935/6. Side two dates from 1940 (in the meantime he had recorded for the Decca Group). In that meanwhile his style had changed slightly, but markedly. It is most noticeable on turning over the LP! Instead of the saxophones being dominant the tone is shared between muted brass and a reed-section with clarinets dominant.

Wir bedauern sehr, dass trotzdem diese Zeitschrift in den meisten Teilen der Welt erscheint, wir nur wenige Abonnenten in den Demokratischen Republiken von Europa haben. Bestimmt gibt es in diesen wichtigen Nationen mit ihren musikalischen Traditionen Sammler, für welche "The Talking Machine Review", ein nicht-profitierendes Unternehmen des Redaktors Ernie Bayly, von Interesse wäre. Die Zeitschrift ist ebenfalls in vielen der Hauptbibliotheken der Welt vorhanden.

Wir sind sicher, dass unsere Leser gerne mehr von der Geschichte der Schallplatte in den Demokratischen Republiken kennen lernen möchten und es wäre für uns eine Ehre, solche Artikel über Schallplatten oder historische Angaben, welche Sammler oder Musikforscher von diesen Ländern übermitteln könnten, zu drucken. Sollte jemand Artikel nicht in englisch schreiben können, so dürfte er in seiner eigenen Sprache schreiben, denn wir können leicht einen Übersetzer finden.

Wir möchten gerne die Anzahl unserer Leser in Ihren Ländern vergrößern und nehmen gerne Einschreibungen in jährlichen Betrag von £3 für sechs Auflagen inbegriffen in Empfang (sollte die Geldumtausch-Kontrolle Schwierigkeiten bieten, sind wir sicher, dass dieses Problem umgehen können).

It is still restrained and sweetly quiet. One hears Bill Shakespeare and Max Goldberg, trumpets, and excellent playing by the late Ted Heath on trombone, who is the instrumental star of side two. Judy Shirley, Sam Costa, and Jack Plant are the vocalists on side one, while Dorothy Carless and the incomparable Al Bowlly are heard on side two.

On side two we hear one of the very few waltzes in any dance band LP reissues..... 'Whose taking you home tonight?' featuring a tasteful vocal by Bowlly supported by an immaculate muted brass trio, as he is on 'My Capri Serenade'.

This record is not for those who merely want 'hot' dance music. If you are collecting a cross-section of British Dance Music, examples of relaxed, pleasing music, or vocals by Al Bowlly you will not be disappointed with this re-issue.

* George Gershwin in London (SH 185)

George Gershwin's stature was not always matched by the 'book' for which he had to set music. 'Tip-Toes' was one such which opened in London at the Winter Garden on 31st. August, 1926, where the title lead was played by Dorothy Dickson. The show ran for nine months.

The big hits were 'Looking for a boy' and 'That certain feeling' sung by Miss Dickson who has a duet in the second with Allen Kearns, the leading man. Laddie Cliff sings 'It's a great little word' solo and 'Sweet and Low Down' as a duet with Peggy Beatty. 'Nice Baby' is a novelty number for Evan Thomas and Vera Bryer.

'Tip-Toes' had opened while another show featuring Gershwin's music was already running; this was 'Lady be Good' which had opened at The Empire Theatre, Leicester Square on 14th. April, 1926, with the leading parts played, sang, and danced by Fred and Adele Astaire, whose work in the show is re-issued on World Records SH124. Presumably it is still available. (It includes piano accompaniments and

solos played by Gershwin himself - recorded in London.) Our record under review has two songs from 'Lady be Good' sung by Buddy Lee who reprised 'Lady be Good' and 'Fascinating Rhythm' in a song & dance routine in front of the curtain.

P. G. Wodehouse and Guy Bolton provided another thin plot for 'Oh Kay' which opened in London in September starring Gertrude Lawrence and Harold French who assured its success. Among the four tracks recorded here we are reminded by Miss Lawrence of one of Gershwin's greatest hits 'Someone to watch over me'. As a duet with Mr. French she sings 'Do-do-do' and 'Maybe' (of which latter you might be more familiar with Bing Crosby's version). Claude Hulbert, playing a 'silly ass' part sings 'Clap yo' hands' amusingly with no feeling at all for the words, which seem out of context if regarded separately from his character in the show. Like its fellows, of the London shows series, the sleeve of this record has another interesting picture of old London, this time featuring mainly old 'General' buses. All the recordings are electrical and add another souvenir of London's musical theatre.

* Edison in Stereo (502)

Dannilo Konvalinka has sent another of his LP reissues featuring an Edison phonograph playing at his Music Museum. This time it is the turn of the Opera.

Its sub-title tells us that artistes are singing our favourite songs, and so well-known are they that I need only list them. Harry Lauder 'Roamin' in the Gloaming', Frederick Potter 'Red Wing', Arthur Collins 'The Preacher and the bear', Ada Jones & Billy Murray 'Snow Deer', 'Come Josephine in my Flying Machine', 'Rainbow', Albert Farrington 'Tipperary', Walter van Brunt 'When You wore a tulip', Manuel Romain 'Trail of the lonesome Pine', Billy Murray 'K-k-k-Katy', 'Casey Jones' and 'The Little Ford rambled right along'. (The latter describing the indestructibility of early Ford cars was not well-known in Britain.)

822

Like its fellow reviewed in our previous issue, this was recorded by placing a microphone in front of an Opera phonograph and it so well done that one imagines the machine to be right in one's room playing.

It is available price \$5.95 from Music Wonder House Recordings, Box 274, Wiscasset, Maine 04578.

OBITUARY

Miss Cecilia Barraud



Miss Cecilia Barraud died on 26th. October, in her 97th. year. She was a daughter of Mark Barraud who owned Nipper, the dog portrayed by her uncle Francis in the picture "His Master's Voice". Miss Barraud sent me the picture above during 1973 in some correspondence when she recounted a few tales of Nipper and her Uncle Francis as she remembered them. We have never previously mentioned Miss Barraud, for although exceedingly active, her relations did not want her exposed in her old age to the unscrupulous and the press. E.B.

speed, being carried on a revolving threaded spindle, and the wax tablet or blank is thus caused to travel slowly under the stationary recording-box. The sapphire cutting-point of the sound-box is lowered so as to enter the surface of the blank to the depth of about $3\frac{1}{2}$ to 4-1000 of an inch, and as the machine runs it cuts a fine spiral groove of uniform depth, running from the circumference of the blank to within two or three inches of the centre, according to the length of the selection recorded.

The exact construction of sound-box used for recording is not disclosed by the experts, but we may take as illustrative two forms which are covered by British patents, Nos. 659-01 and 627-01. (Figs. 9 and 10.)

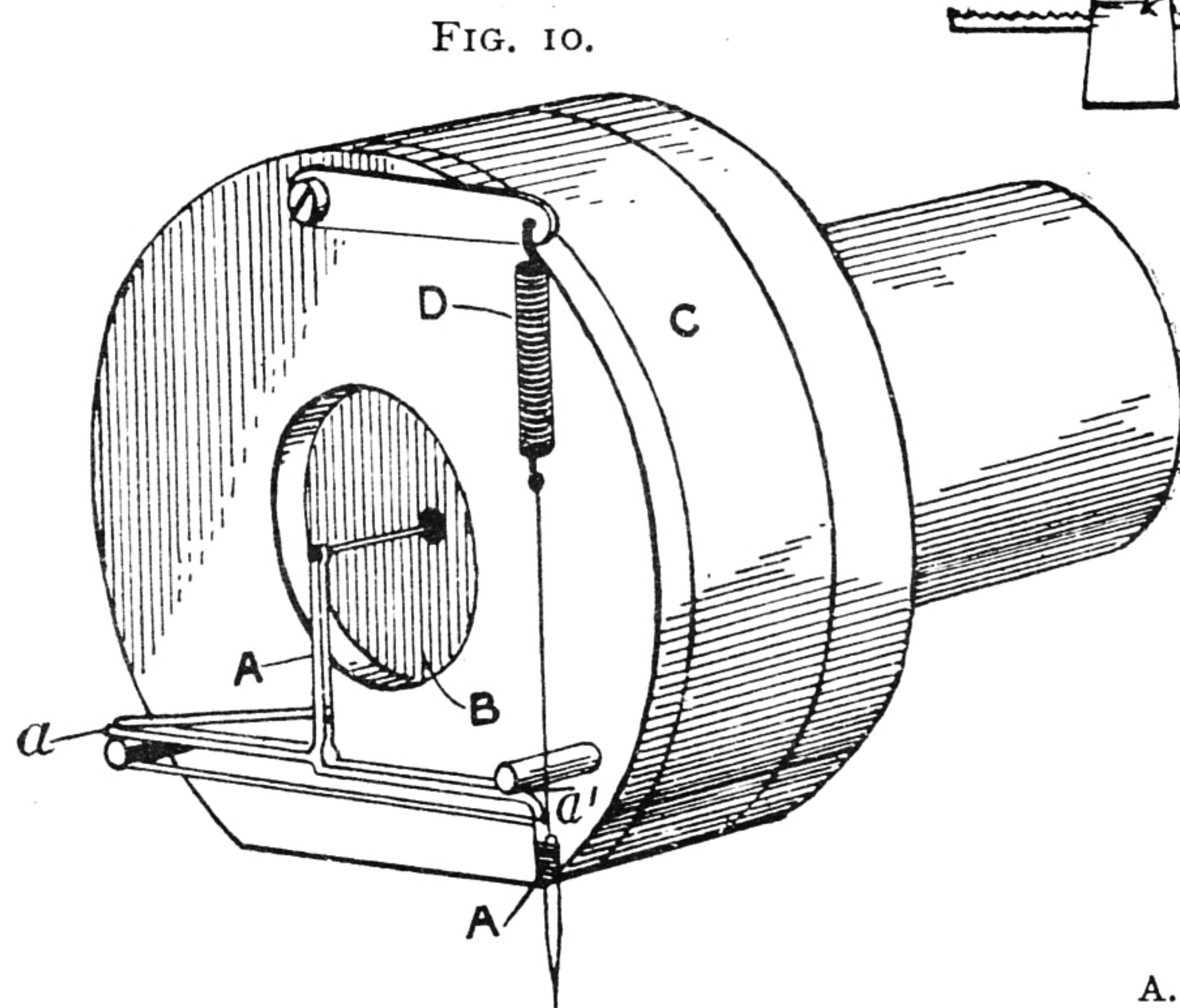
The turn-table travels, as a rule, about 1-100th of an inch laterally for every revolution, so that the spiral cut comes round about 100 times in the width of one inch. It will thus be evident that the lateral undulations of the sound line must be minute in the extreme as otherwise the lines would at points break into one another.

The recording blank is made of a soapy wax. Each laboratory has its own receipt for the composition of the blank, but generally speaking the compound is made up of stearin and paraffin. Many other substances have been suggested, amongst which may be mentioned barium sulphate, zinc white and stearin, ozokerit and paraffin.

The consistency of the blank material must be such that it is stiff enough to retain its shape when the sound groove is cut in it, and at the same time it must not be so stiff as to offer any great resistance to the cutting point. It must not chip nor flake, as otherwise the recording point will cut a groove with ragged sides, and this will increase the scratching sound made by the needle on subsequently reproducing. The best results are obtained by a tablet of such consistency that the cutting

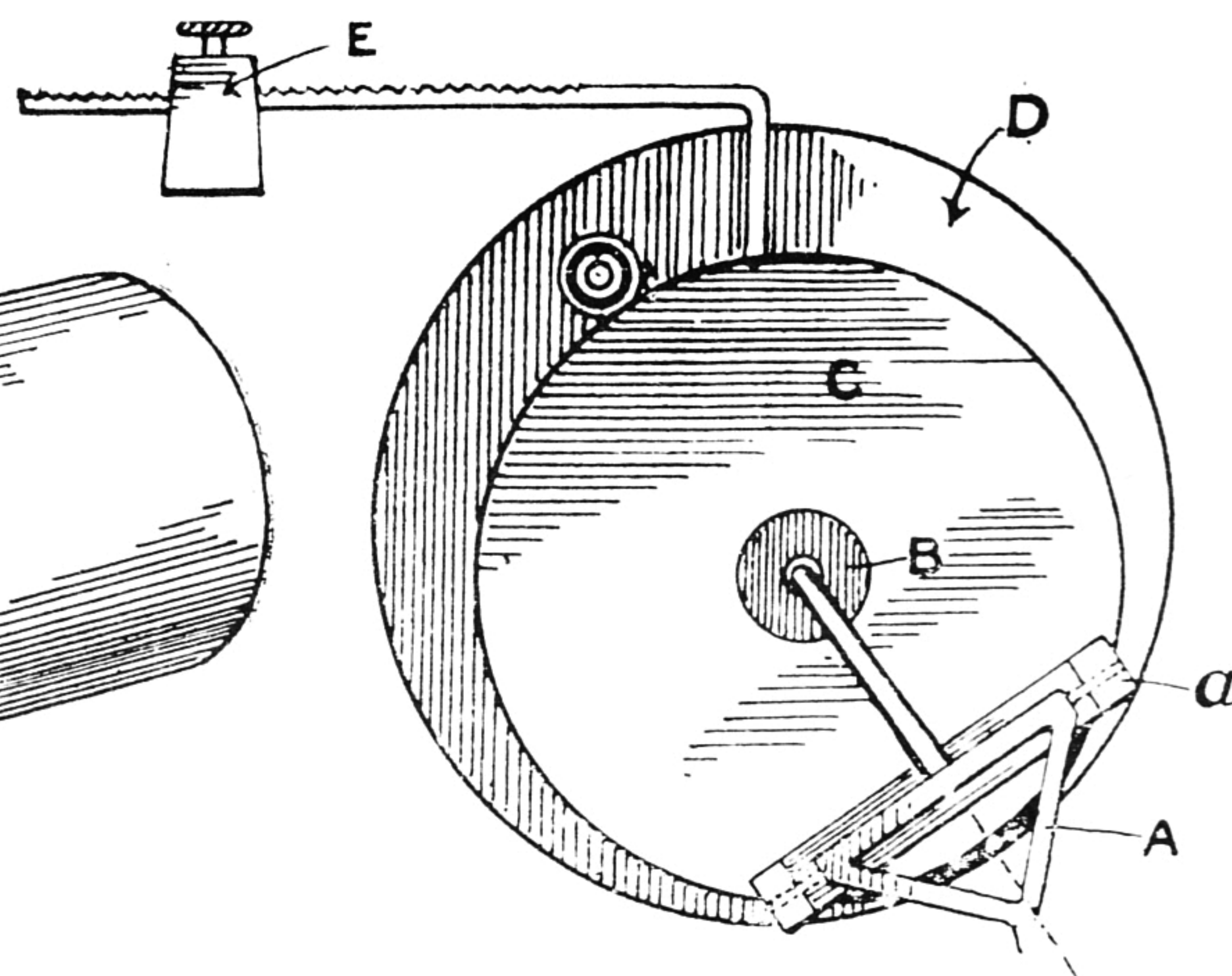
point detaches an unbroken thread or shaving of wax.

The diameter of the recording blank varies, but the maximum diameter employed is about 12 inches. It will be clear that the size of the record cannot be increased beyond certain limits, when it is remembered that the blank is revolved at a uniform speed, and that consequently the outer portion of the blank is running past the recording point at a much higher speed than the inner portion, when this is brought under the recording sound-box. Thus, with a 12 inch disc, when the cutter is $\frac{1}{2}$ inch from the edge, it will in one revolution describe a line on the record of a length approximately equal to the circumference of a circle of 11 inches diameter—that is to say, 34.5 inches. By the time the recording point has worked in another 3 inches towards the centre of the tablet, the length of its path over the wax will approximately equal the circumference of a circle of 5 inches diameter, or 15.7 inches. The rate of revolution of the tablet being uniform, the sound line at the edge of the tablet is accordingly being cut at more than twice the speed that it is cut at nearer the centre; and the speed at which the recording point can be made to cut the sound groove satisfactorily can only be varied within certain limits. If the diameter of the tablet is increased, the outside speed will be too great for proper recording; and if the speed of the turn-table is correspondingly decreased, the ripples in the sound line near the centre will be too close together and cramped; there will be too many vibrations per inch of sound line to allow of proper recording and reproduction. The obvious solution would be, of course, gradually to increase the speed of the turn-table as the recording point nears the centre of the blank, but there then arises the necessity of using mechanism for securing a corresponding gradual change of speed on the reproducing machine, in order to keep the selection in the proper key. Devices for securing an increasing speed have



RECORDING SOUND-BOX.

- A. Stylus. a. Stylus bearings.
 B. Diaphragm. C. Diaphragm holder.
 D. Tension spring.



RECORDING SOUND-BOX.

- A. Stylus. a. Stylus bearings. B. Diaphragm.
 C. Diaphragm holder. D. Flange of Sound Tube.
 E. Counter-weight.

been invented, but they are not free from objection, and have never come into general use.

The record in wax having been made, the next step is to produce a negative in copper. The wax tablet is dusted with graphite, which is worked into the grooves with a badger hair brush, to make it electro-conductive, and is lowered into the electrolytic bath of copper salt solution. In order that this negative may be able to resist the pressure to which it is subjected in pressing records, it is necessary that the deposition of the copper should be thoroughly homogeneous. To this end, and also in order to hasten the process so that the blank may not be attacked by the solution, the blank is kept continuously in motion in the electrolytic bath. The process is continued until the copper shell is nearly $\frac{1}{9}$ of a milli-

metre in thickness. The negative thus formed may be termed the master negative, and from this master a few commercial samples of the record can be pressed by means of which the quality of the record can be tested. It is not, however, usual to press more than two or three records from this negative. Seeing that sometimes as many as six thousand or more copies are sold of a single record, it is natural that the manufacturers should take steps to enable them to multiply copies without injuring their master negative or having it worn out, for it is not usual at this stage to obtain further negatives from the original wax record. They accordingly make duplicates of their master negative, by taking dubs or impresses of the master in a wax composition, from which in turn working matrices are made. Copper shells are obtained from these dubs in the same way as from the original wax tablet, but the metal is only deposited to the thickness of about half-a-millimetre. The shells are made absolutely true and flat at the back, so that any irregularities caused in the electro-deposition may not be transferred in

pressing to the front or face of the shell. They are then backed up or stiffened by a brass plate about one-tenth of an inch in thickness. The attachment of the backing plate and matrix is effected by sweating or soldering them together under pressure. The backing plate is supported on a heated table, a thin layer of solder is run over it, the shell is laid upon it and pressed firmly down, with an elastic protective cushion of asbestos, for example, placed over the face or recorded surface of the shell to prevent the sound ridges in it from being injured. The matrix thus obtained is now nickel-plated on the recorded side so as to present a better wearing surface, and after polishing is ready for use in the pressing machine.

Attempts have been made to use a recording blank of conductive material, or containing sufficient conductive material to allow of omitting the subsequent graphiting or metalising of the blank; the objection to this procedure has always been that such substances offered too much resistance to the recording point.

The commercial record is pressed in a substance the essential qualities of which are that it should be hard at normal temperature, but capable of being softened and made plastic by heat. It must be tough and elastic enough not to be easily broken when pressed into discs of about $2\frac{1}{2}$ mm. in thickness; it must be thoroughly homogeneous; and it must not be gritty in composition, as otherwise it will augment the scratch of the needle, and wear off the point. Finally, the record must be so hard, when cold, that it will retain the contour of the sound groove, even after it has been played a large number of times. Various substances and compounds have been used or suggested for making records; celluloid, glass, papier-maché, vulcanized rubber, casein, and shellac with an admixture of crocus powder. In nearly all the compounds actually used shellac is the principal ingredient.

The compound usually employed to-day is made up of shellac, wood charcoal, heavy spar (barium sulphate), and earthy colouring

matter. Various animal and vegetable fibrous materials, such, for instance, as cotton flock, are added to give the record the required toughness. The several ingredients are first finely ground and then carefully measured and mixed according to formula. The mixture is put into a revolving drum, and the flock added. After being passed through a magnetic separator to remove any metallic particles, it is next mixed by heated rollers until a thoroughly homogeneous plastic mass is obtained. The mass is now passed through calendar machines which roll it out into thin sheets, and as it passes from the calendar it is divided into sections, each section being about the requisite quantity for one record.

The records are pressed in hydraulic presses. The matrix is heated, and placed face upwards in a mould on the lower half of the press, being centred by a pin passing through the middle of it; the label for designating the selection is placed face downwards on the matrix, and on this is placed, in a warm, plastic state, the quantity of material required for one record. The press is operated, and the mass is immediately distributed all over the mould. Both halves of the press are furnished with cooling plates, through which a stream of water can be passed so that the pressing surfaces can be immediately cooled, and the record mass consequently hardens quickly and retains the impressions of the matrix. The record is removed, and its edges are trimmed up with emery wheels; for the record material is too hard to allow of any cutting instrument being used. The record is then ready for sale.

It will be seen that the process of producing a commercial record is a long and intricate one. It is, further, a process or series of processes which have required a very high degree of scientific skill and untiring experimental work to bring the sound record to its present pitch of excellence. There are still objections to be overcome, and perhaps the greatest of these is the hissing or scratching sound produced by the needle in reproduction. There is, however, no reason to doubt that eventually

this will be overcome. A material will be found for making the records which will ensure that the sides and bottom of the sound groove are absolutely smooth. Even this, however, will not entirely eliminate the scratch, which must be regarded to some extent as inherent in the sound groove. The recording point makes a slight hissing noise as it cuts the wax, and that means that the recording point is vibrating on its own account, apart from the vibrations which it is conveying from the diaphragm to the wax tablet; consequently we must expect the recording point to be registering its own scratch vibrations as it goes along. These scratch vibrations are exceedingly minute and of a very high frequency, and in the ordinary course might not be heard, were not the diaphragm abnormally sensitive to vibrations of high frequency; the actual result is that the scratch waves are reproduced with proportionately more precision if anything than the musical waves of the selection.

An invention has recently been published which, if practicable, should do much to remove the defect of scratch. According to this invention the stylus of the recording sound-box, instead of cutting a groove in a wax blank, is made to deposit a fine stream of material upon a polished surface. The original record, therefore, has a raised sound line on it, instead of a grooved one. The substance deposited is one which quickly hardens on deposit, so that it will not spread on the polished surface. A negative is made from this original, and the matrix used for pressing is made from this negative.

Much attention has been bestowed on the diaphragm both of the recording and of the reproducing sound-box. Diaphragms have been tried of almost every possible substance. Copper, tin, celluloid, rubber, leather, gold-beater's skin, animal membrane, glass, and mica have all been used, and as many

different methods of supporting them in the sound-box have also been tried. The object aimed at is to secure a light and highly sensitive diaphragm, and to hold it in the sound-box so that in vibrating under the impact of the sound waves it will buckle as little as possible, for the effect of buckling is to slightly distort the sound waves. A glass diaphragm is usually employed in recording sound-boxes, one being selected out of a score that may be tried. Reproducing sound-boxes are now always made with mica diaphragms.

It is interesting to note that steps are to-day being taken in many countries to form collections of voice records of singers, artists, and other famous personages, and that an important part is played by the talking-machine record in science.

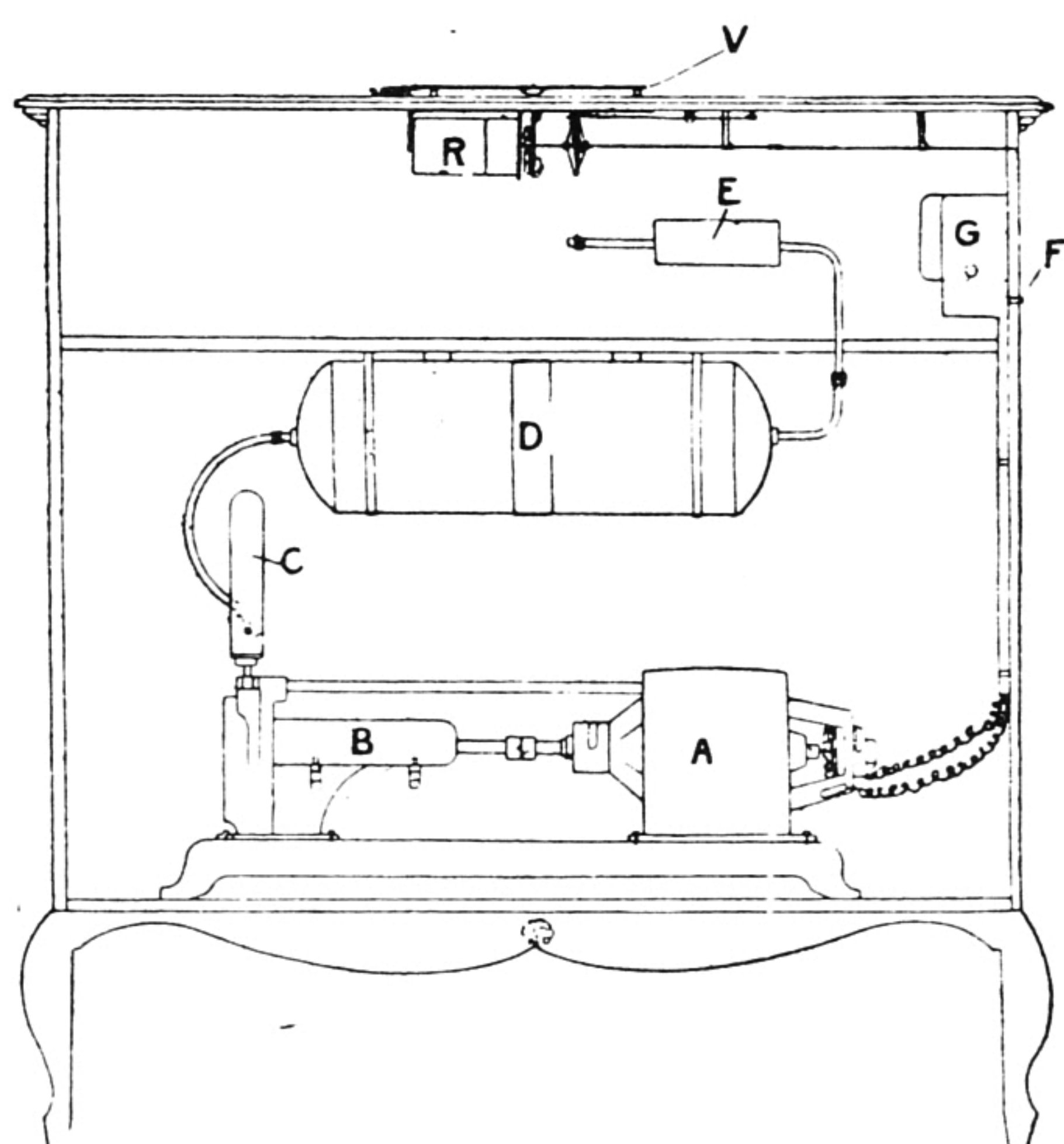
In June of 1906 a number of matrices were deposited at the British Museum of records made by well-known artists and others. These have been sealed up, and are not to be taken out for fifty years. Thus records of these artists' voices have been secured for practically all time.

On the 24th December last there were deposited in a vault of the Paris Opera House discs bearing records of the voices of Tamagno, Caruso, Scotti, Plançon, de Lucia, Patti, Melba, Calvé, and other artists. The statute establishing this collection provides that the records shall be taken out and played once every one hundred years. The collection is to be added to every year.

Austria has had a Public Phonogram Record Office since 1903. Dr. Pösch, who recently returned from two years wandering among the tribes of South America, brought with him many records of religious, ceremonial, and other songs, which are of great ethnological interest.

In Germany, although no public office has as yet been established, the German Anthropological Society and the Ethnological Museum each have their collections.

FIG. 11.



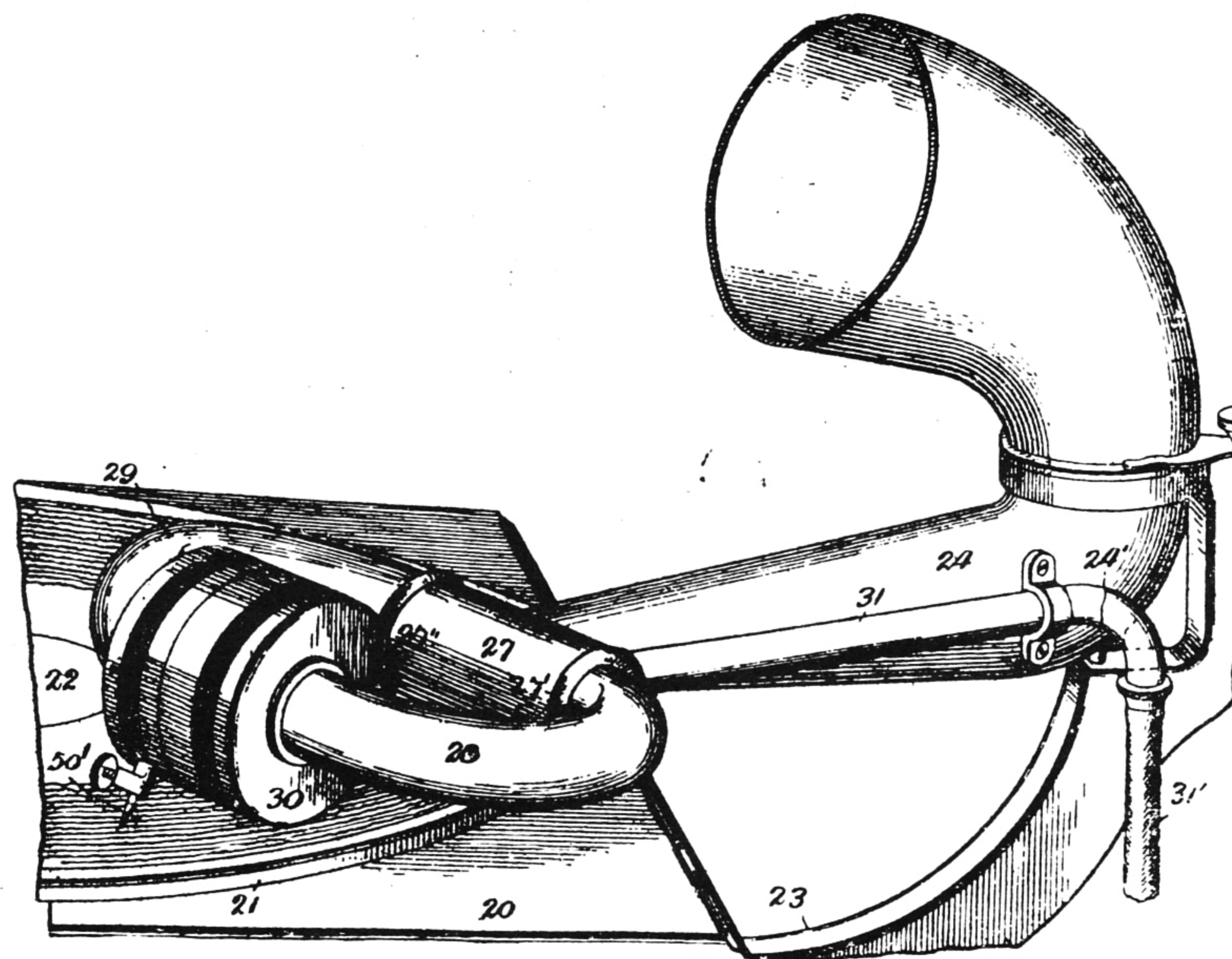
A. Motor. B. Blower. C. Oil Separator.
 D. Air Reservoir. E. Dust Extractor. F. Electric Switch.
 G. Fuse Box. R. Turntable Motor. V. Turntable.

A short time ago the Hungarian Ethnological Museum purchased a number of machines, and appointed a certain Dr. Vikar Bela to travel through Hungary and to make records of the various dialects found there, in order that the folk songs of the people might be preserved. The records have been registered and are preserved in the archives of the Museum.

Professor Garner, of the United States, is reported to have taken records of the sounds made by the West African apes, and to be able clearly to distinguish certain sounds betokening, for instance, fear, hunger, friendship. He described how he established himself in a cage in the forest where the apes came and visited him; he held in fact a sort of school which was attended by carefully chosen pupils.

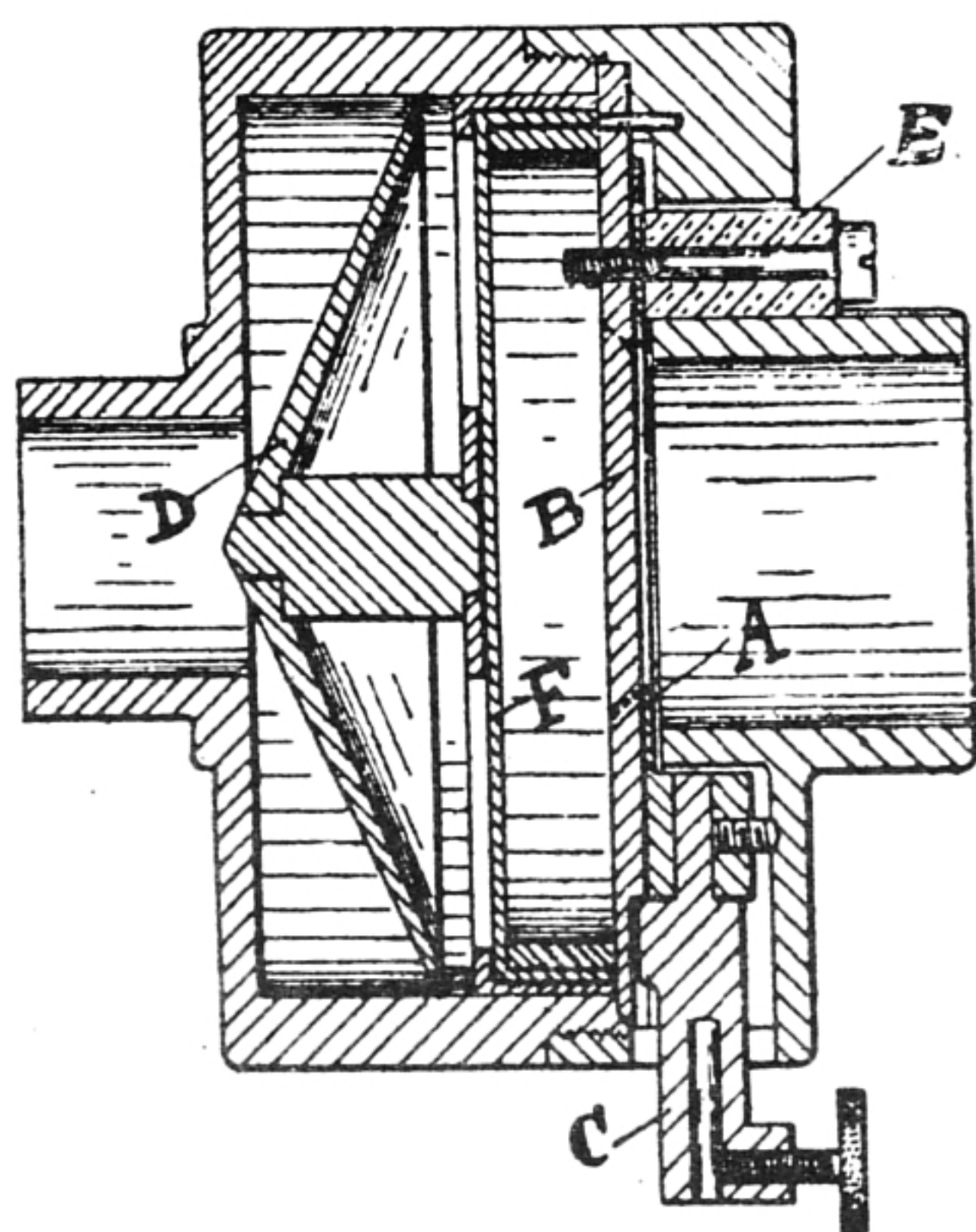
The story is known of Humboldt finding a parrot in Brazil which was able to speak an otherwise extinct Indian dialect. The scientists

FIG. 12.



PNEUMATIC SOUND-BOX AND ARM IN OPERATION.

FIG. 13.

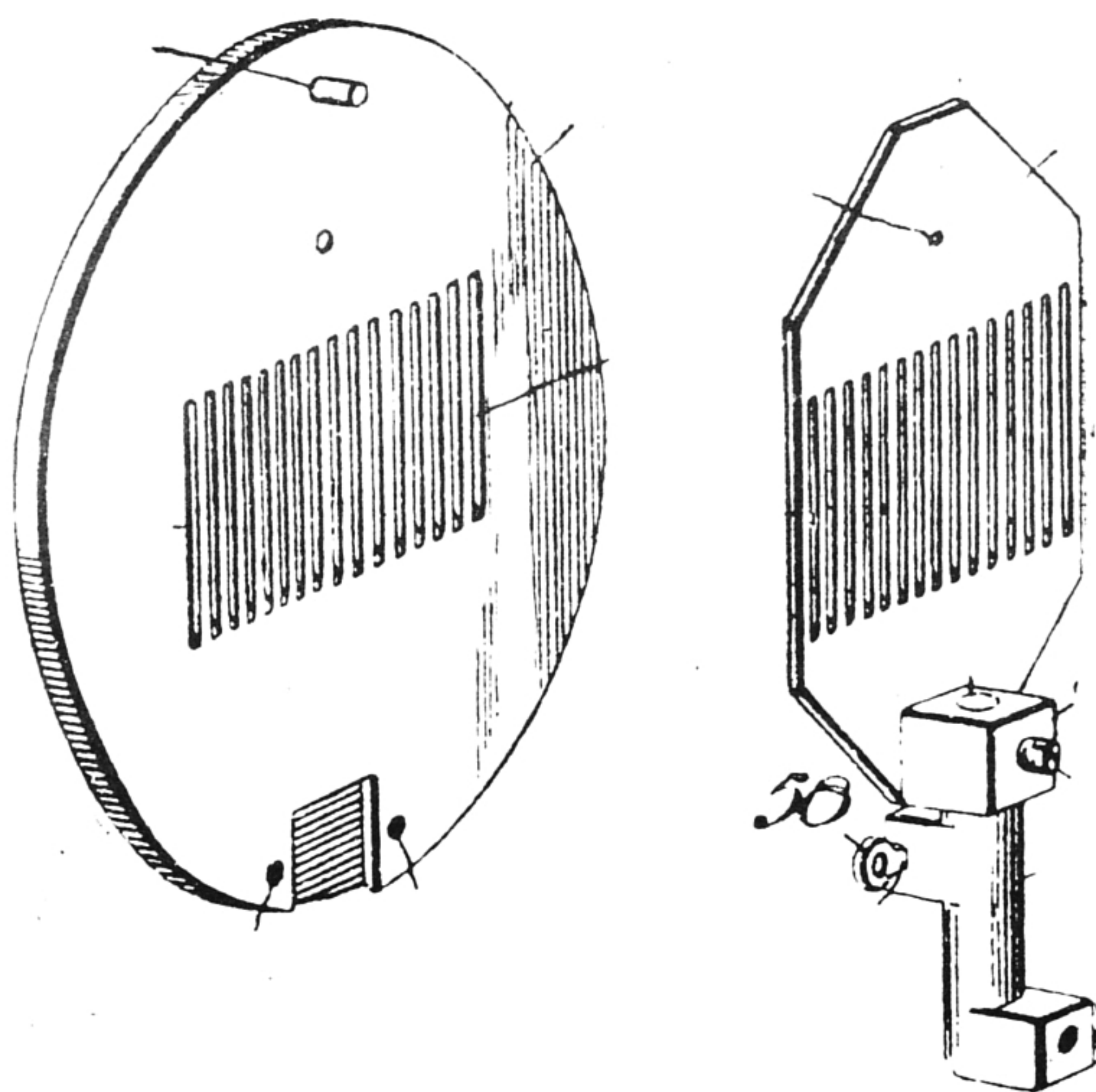


SECTIONAL VIEW OF PNEUMATIC SOUND-BOX.

of the future will, as you see, have more reliable sources of information in the talking-machine record.

I have here some records made by the Pigmies of Central Africa who were brought on a visit to this country by Colonel Harrison.

FIG. 14.

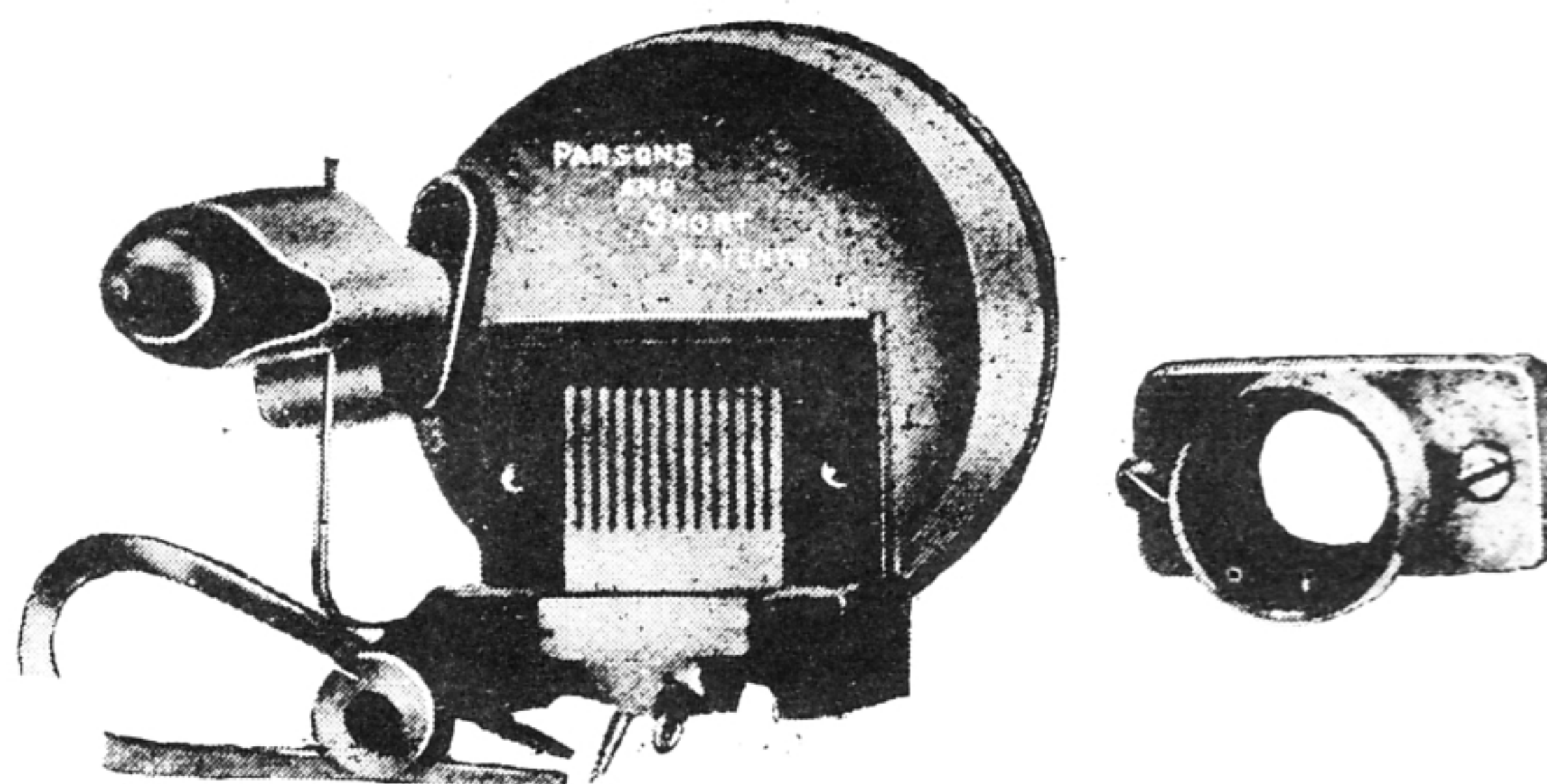


VALVE OF PNEUMATIC SOUND-BOX.

If you will permit me I will give you a Pigmy folk song with national accompaniment.

This paper on Mr. Berliner's invention, and the recording and reproduction of musical sounds, would not be complete if I omitted to refer to another instrument, that now known as the Auxeto-Gramophone or Auxetophone, which

FIG. 15.



PARSONS' SOUND-BOX.

works on a different principle, but by means of which sound records of the Berliner type can be most effectively reproduced. In this machine the record does not vibrate a dia-

FIG. 16.

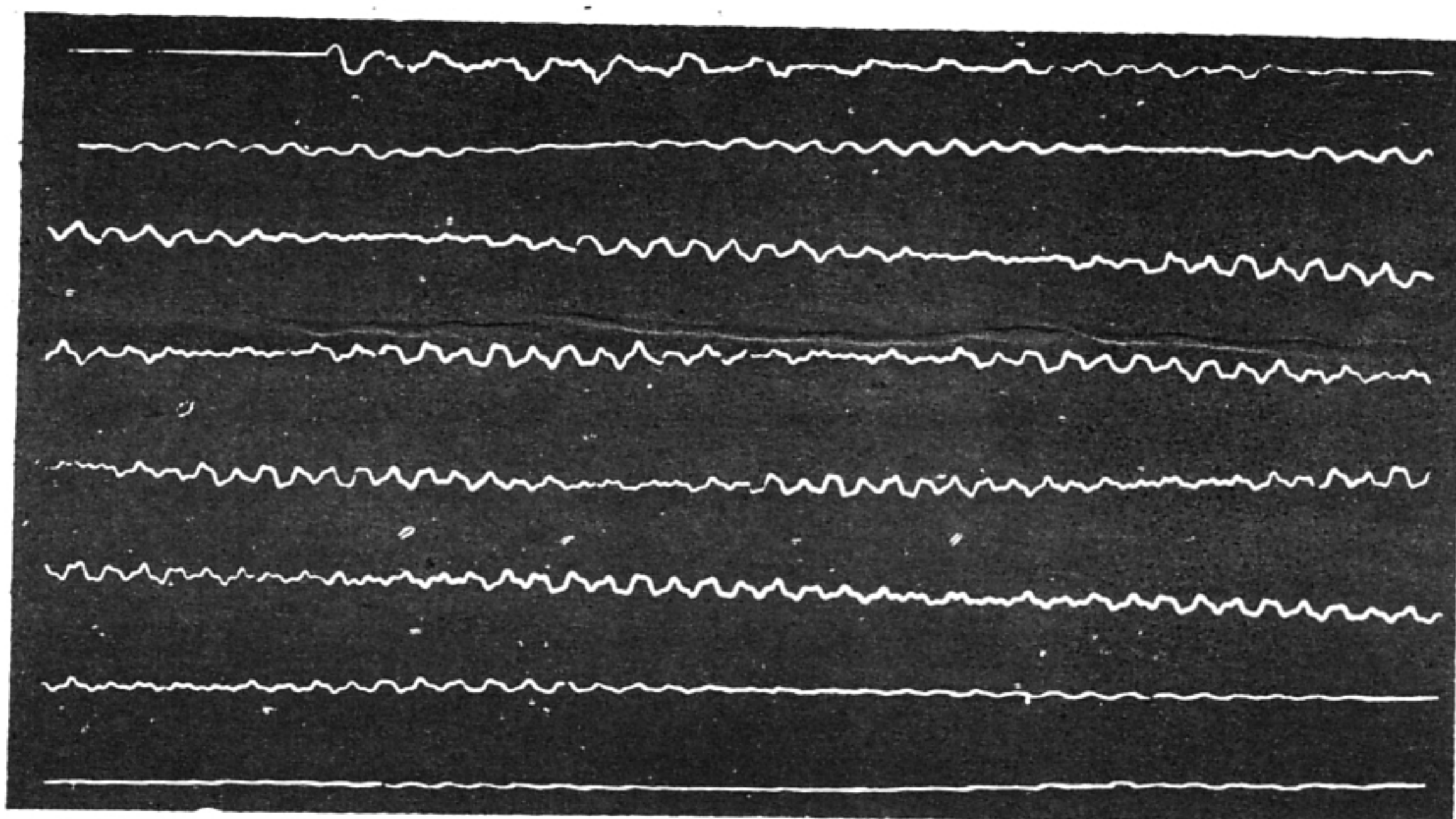


NOTE OF ORCHESTRA: .5 sec.

phragm, but it vibrates a very finely-adjusted valve which controls the flow of a column of air under pressure. As the air passes through the valve there are given to it minute pulsations which correspond to the undulations in the sound record, so that sound waves identical with those originally recorded are set up in the surrounding air and travel to the ear of the hearer.

In the apparatus you see here (Fig. 11), a one-sixth horse-power electric motor drives an air-

FIG. 17.



GONG : .4 sec.

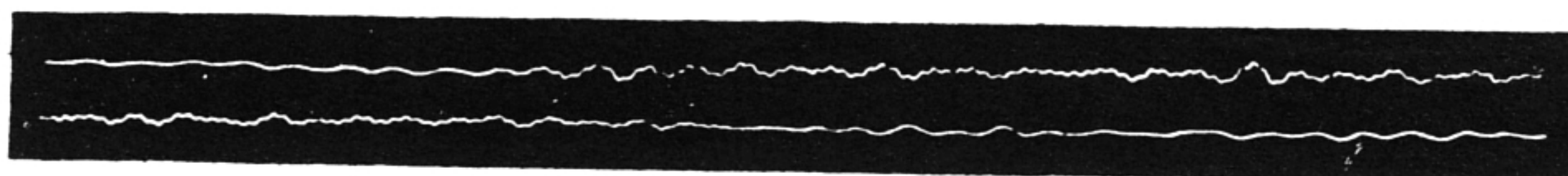
compressor. The air, after passing through an oil separator or filter, enters a reservoir, which helps to ensure a regular flow of air to the valve. From the reservoir the air passes through a dust collector before it reaches the valve, as the very fine adjustment of the latter is apt to be interfered with, if particles of dust or oil get into it.

The sound-box, as you will see on referring to the drawing, comprises a vibrating comb or grid valve, rigidly connected to the stylus-bar or needle-holder, and a grid valve-seat. The valve is on the side of least pressure, and is carried by a spectacle spring. (58, Fig. 14.) The air is deflected to the walls of the sound-box by a conical deflector, so that it reaches the whole of the surface of the valve at uniform pressure. A resilient rubber washer holds the grid valve normally against the valve seat. As the needle moves, following the sinuosities of the sound line, the valve moves with it, and thus opens and closes more or less the slots in the valve seat through which the air is rushing. The effect of this I will let you hear for yourselves.

The first practical talking-machine working on this principle was made by Mr. Short, who patented his invention in 1898. The Hon. C. A. Parsons then took up the invention, and considerably improved it. I have a model here of the improved Parsons' sound-box (Fig. 15). The auxetophone sound-box as used to-day is on substantially the same lines, though its construction has been simplified.

Before closing this paper I should like to give you some details concerning the sound line in a gramophone record, and show you some magnified tracings of sound waves. The approximate length of the spiral line in a fully recorded 12-inch record, carrying the sound line to within $2\frac{1}{4}$ inches of its centre, is π times

FIG. 18.



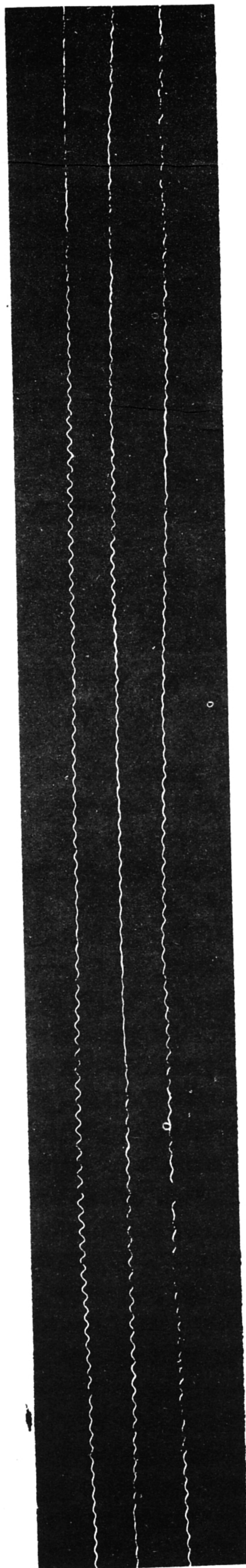
PIANO AND WHISTLE : .1 sec.

FIG. 19.



PLUCKED STRING : .05 sec.

FIG. 20.



TREMULO: '4 sec.

the mean diameter multiplied by the number of turns, that is, $\pi \times 8 \times 350$ inches $= 244$ yards 1 foot. But this is the length of the line without the ripples. These at least double its length, if the pitch of the record is high and the sounds recorded rich in harmonics, so that we have a sound line over 480 yards long. It is no wonder that the needle point must be finely tempered, and that it shows signs of wear after playing a record. Its average speed over the record is 31.8 inches per second. For a fundamental note on middle C, this gives us about 8 vibrations per inch.

The tracings which I have here are some made by Prof. Scripture, of Washington, and are reproduced in his interesting work, "Researches in Experimental Phonetics." They are traced by a specially-constructed instrument from actual gramophone records, and they show the sound line on a very much magnified scale.

The "time equation" of the tracings shown by Professor Scripture is 1 mm. $= 0.0004$ sec., that is to say, 1 mm. length of the tracings show the sound waves produced in 0.0004 of a second, or 8.2 feet per sec. The reproductions shown in the Figs. are about half-full size, so that 4.1 feet equals the length of tracing for 1 sec.

Fig. 16 shows the waves of a note of an orchestra, produced in just under .5 of a second; a vibration with a wave length of about 3 mm. is noticed occurring again and again. These are seen to be grouped in threes, indicating a tone with a period of 9 mm. The presence of loud bass notes is indicated by the greater amplitude of certain waves. There is one which reinforces every sixth vibration; a very complicated curve is the result. It is marvellous that the ear can sift these vibrations so as to distinguish the notes of the various instruments from one another.

Fig. 17 shows the vibrations of a gong. The gong is struck, but the special vibrations do not commence immediately. The curve of the low fundamental has other high vibrations

the curve of the actual sound waves of a record being produced by means of a spot of light, reflected from a small mirror attached to a gramophone diaphragm on to a revolving mirror and thence on to a screen. The apparatus is one invented by Mr. G. Bowron.

During and after the reading of the paper a selection of records of orchestral effects and of songs sung by celebrated singers were rendered by the latest form of Gramophone and by the Auxeto-Gramophone.

DISCUSSION.

The CHAIRMAN (Sir William Preece) in proposing a hearty vote of thanks to the author for his interesting paper, said it was the custom of the Society to invite discussion on the papers read before it, but he was sure the audience would agree that the paper was such an excellent one, and had been so enchantingly illustrated, that there was nothing further to be said on the subject, except perhaps on the question of priority of patents, and so on, which could be better discussed in other places. He had had a long experience as a lecturer and speaker, but he did not think he had ever seen an illustration which gave more food for thought, than the connection between the sonorous vibrations of the music, and the vibrations of light, shown in the last experiment. They had heard, with their ears, certain musical sounds, and at the same time had seen, with their eyes, the vibrations following each other methodically and in scientific order. He wished to impress upon the audience that what they saw on the diagram were absolutely the corresponding movements that took place in the tympanum, a little organ of animal tissue inside the ear, about the size of a fourpenny piece, which had a beautifully delicate construction, almost beyond conception, reproducing every sound uttered. Through the sense of sight the vibrations were seen on the diagram, and through the sense of hearing the music was heard. From the retina of the eye and the diaphragm of the ear there was a kind of telegraphic movement of the nerves going on which conveyed the message to the brain, and produced there the concep-

tions which had been so vividly brought before them. His mind was carried back to Wednesday evening, May 8th, 1878, exactly 30 years ago, when he showed the phonograph in the theatre of the Society. His paper then was not accompanied by any music or experiments such as the author had shown, but he was able to speak on to a tin-foil plate, and impress on it sonorous vibrations to be uttered; and both the audience and himself were delighted to hear the reproduction. That was the first occasion on which the phonograph was shown to the Society. The author had given a most interesting history of the evolution of the auxetophone. He dealt first of all with Edison's phonograph; secondly, with the graphophone of Tainter and Bell; thirdly, with the gramophone of Berliner, and finally, with the auxeto-gramophone of the Hon. Charles Parsons, to whom they were so much indebted for marine turbines. That evolution had occupied thirty years, but that was a common feature of the history of the introduction of any invention. First of all it was introduced as a toy, then as a scientific apparatus, then as a practical machine, and lastly as a source of industry. He wished the author had given some idea of the financial aspect of the question, for after being a plaything and a waster of money for about 25 years it had now become such a prosperous trade that it was a source of great wealth to the gentlemen connected with it.

The vote of thanks having been carried unanimously, Mr. REDDIE briefly acknowledged the compliment, and the meeting terminated.



We are grateful to EMI Ltd. for the loan of a reprint of Mr. Reddie's paper, which had been commissioned by The Gramophone Co., in 1908. We have omitted the cover which bore only the title and have re-arranged the layout to fit our pages. Mr. G. Bowron mentioned above was joint purchaser of all the cylinders from the liquidated Sterling company. Mr. Harry Edmunds' paper on the Graphophone was reprinted in our issue No. 33 of April, 1975.